Nursing Facilities in Massachusetts 1989-1993

February 1995

GOVERNMENT DOCUMENTS COLLECTION
MAY 16 1995
University of Massachusetts Depository Copy

UMASS/AMHERST
312066 0282 4235 8

MASS. HS110.2:N93/2

A Report of the
Massachusetts Rate Setting Commission

William F. Weld, Governor
Argeo Paul Cellucci, Lt.-Governor
Commonwealth of Massachusetts

Gerald Whitburn, Secretary
Executive Office of Health & Human Services

Digitized by the Internet Archive
in 2014

https://archive.org/details/nursingfacilitie00mass

Executive Summary

Health care reform has been the focus of much debate on both federal and state levels. However, long-term care services have not been at the forefront of many of the major proposals coming from Capitol Hill. In fact, most of the proposals barely address this segment of the nation's health care system. Yet, nearly one-third of the nation's current Medicaid expenditures are consumed by long-term care services.[1] Care provided in institutional settings, primarily nursing facilities, constitutes approximately 85% of the Medicaid spending for long-term care.[2] It is anticipated that federal and state governments will be required to devote an increasing share of their budgetary resources to funding Medicaid-supported long-term care services.

Providers in the Commonwealth are concerned about health care reform initiatives as federal and state programs are their major funding sources. It is estimated that the Medicaid program in Massachusetts will fund $1.5 billion in nursing facility services for FY94 (7/1/93-6/30/94). During 1993, the nursing facilities represented in this study (n=512) reported that Medicaid-funded residents accounted for 61% of their revenue, with the Medicare program contributing an additional 10%. Increasing fiscal pressure on both the purchasers and the providers, coupled with the aging of the nation's population, will motivate policy-

makers to address the needs of the elderly for long-term care services in the near future.

This report presents descriptive analyses of the Medicaid-funded nursing facilities in the Commonwealth of Massachusetts for 1989 through 1993. Aggregate data are provided on demographic and financial characteristics of the facilities, total utilization and occupancy by payment source, and on the demographic and clinical characteristics of the Medicaid-funded residents in these facilities.

The facility-level data were drawn from the annual financial reports (RSC-1 and RSC-2 Cost Reports) which facilities file with the Massachusetts Rate Setting Commission. The data provided in these documents are the basis for the facilities' Medicaid reimbursement.

The resident-level data were drawn from the Management Minute Questionnaires (MMQs) filed with the Massachusetts Division of Medical Assistance for the fourth quarters of 1991, 1992 and 1993. The MMQ measures resident acuity by assigning a "minute value" to each of the services provided to residents in a nursing facility. As the form is required only for Medicaid-funded residents, the resident demographic and clinical characteristic data may not be representative of clients funded by other sources, either public or private.

The MMQ form was not implemented as the statewide Medicaid-funded resident assessment instrument until January of 1991. Thus, score increases occurring between 1991 and 1992 may reflect a combination of a 'learning curve' phenomenon associated with a new form as well as actual increases in the care needs of Medicaid-funded residents over time. Changes in scores after this period are less likely to be attributed to 'learning curve' variations.

The sample size for each year represents approximately 99% of all Massachusetts nursing facilities with Medicaid-funded residents; which is approximately 95% of all nursing facilities in the Commonwealth. All data have been thoroughly reviewed and extreme values which were determined to be reporting errors were removed prior to analysis. This report is intended to be descriptive in nature, thus, rigorous statistical testing was not undertaken to determine the significance of year-to-year, between-group, or within-group variation.

The majority of the report is dedicated to tabular presentations of central tendency statistics (median or mean values and the standard deviation where appropriate) on annual aggregate data. Values for the industry as a whole and for selected groupings are provided. Facility location (Health Service Area); licensed level of care (Skilled, Intermediate, Multi-Level, Pediatric); profit status (non-profit or for-profit); and management structure (independent or management company owned/operated) are the categories selected for this report. Year-to-year changes do not reflect an adjustment for inflation, therefore, references to percent of change between two periods must be considered nominal.

Though care and consideration must be taken when drawing conclusions from these data, this report does provide necessary demographics about the nursing facilities in the Commonwealth, their fiscal performance and their Medicaid-funded resident populations; thus, general remarks about the nursing home industry in Massachusetts can be made.

Facility Demographics, Utilization, and Occupancy (1989-1993)

Facility Demographics. The number of facilities with Medicaid-funded residents remained consistent between 1989 and 1993; with only moderate shifts in the proportion of facilities reporting for-profit versus non-profit status, and the proportion which were independently operated versus owned/operated by a management company.

Utilization and Occupancy. Overall utilization of the available nursing facility bed-supply fluctuated slightly during the five-year period (96.8% in 1989 versus 96.1% in 1993), while the total supply of beds increased by at least 5% (524 facilities with 47,813 beds in 1989 versus 514 facilities with 50,205 beds in 1993). However, there were shifts in the proportion of residents funded by private and various public sources. Medicaid remained the primary funding source for the majority of nursing facility residents (73%), while the mean proportion of residents funded by Medicare rose from 2.2% in 1989 to 6.9% in 1993. At the same time, the mean proportion of privately-funded residents dropped from 21.1% to 16.6%.

Expenses, Revenues, and Financial Structure (1989-1993)

Expenses. There was a nominal increase in the median per diem Total Operating Expense of approximately 31% between 1989 and 1993. The nominal rates of increase for the median per diem Variable Expense (42%) and the median per diem Administrative Expense (45%) were nearly twice that for the median per diem Nursing Expense (24%). The proportion of facilities hiring nursing pool employees, which had reached almost 80% in 1989, dropped to 54.5% by 1993.

Analysis of employer expenditures on employee health insurance and pension benefits for 1989 through 1993 (measured in dollars spent per $100 of gross employee wages) indicates that non-profit facilities and those which were independently operated consistently spent more than for-profit facilities and those owned/operated by a management company, in each year. In addition, the statewide median for employer's spending on worker's compensation insurance per $100 in gross employee wages increased by 31.2% between 1989 and 1993.

Revenues. The median per diem for Total Revenue rose by 30% between 1989 and 1993. Those facilities which were owned/operated by a management company experienced a 24% increase in their median Total Revenue; for those independently operated, the median Total Revenue increased 43% between 1989 and 1993. The five-year nominal rate of increase in the median per diem revenue received varied greatly across the three major funding sources; Medicare at 51%, private at 39%, and Medicaid at 27%.[3]

Financial Structure. The financial structure analyses undertaken, though limited in scope, indicates a positive trend in the fiscal performance of nursing facilities in the Commonwealth, for 1989 through 1993. The data indicate that nursing facilities experienced increased liquidity and slightly lower debt positions by 1993. In addition, the industry's earning power per dollar of assets remained relatively steady over the five-year period, with a noticeable

improvement between 1992 and 1993. The marked improvement in the industry's financial structure appears to have occurred after 1990.

Resident Demographics and Clinical Characteristics (1991-1993)

Resident Demographics. The demographic distribution of the Commonwealth's Medicaid-funded residents by gender, race, and age is comparable to other industrialized states. The majority of Medicaid-funded nursing home residents are white, female, and over 80 years of age.

Clinical Characteristics. Resident acuity, as measured by the fourth quarter Management Minute Questionnaires (MMQs) submitted to the Division of Medical Assistance for Medicaid-funded residents, increased 6.1% between 1991 and 1993. By 1993, the industry-wide average MMQ score for this population had risen to 191.1 minutes.

When the Medicaid-funded resident group is segregated by gender, the average MMQ score for women was consistently higher than that for men for each year studied. However, the rate of increase between 1991 and 1993 varied (women 5.8% versus men 7.0%), reducing the difference between the groups' mean Management Minutes scores by 1993.

In closing, this report should serve as a catalyst for discussions on the integration of acute and long-term care service delivery for the elderly in this state. Legislators and policy-makers may use these data to develop a common understanding of this sector of the health care system and be better prepared to address the concerns of providers and purchasers. Client-advocates may look to this report for data on who is served by these facilities and how best to meet the needs of those currently in institutional settings for long-term care. Those in the field of managed health care may use this report to begin to assess the role of long-term care facilities in an integrated health care network.

The Commission is committed to providing accurate data which informs purchasers, providers, policy-makers, and health care users in order to promote value in each of the health care delivery systems of the Commonwealth.

Endnotes for the Executive Summary

1. The Urban Institute, 1994, prepared for the Kaiser Commission on the Future of Medicaid, conference proceedings from "Heath Reform Under Construction: States at Work," Aug. 14, 1994.

2. Ibid.

3. These values were not adjusted for resident severity indexing, weighted by volume of use, nor adjusted for year-to-year inflation.

Nursing Facilities in Massachusetts 1989-1993

February 1995

Barbara Erban Weinstein, Chairman
Louis I. Freedman, Commissioner
Margaret Long Randle, Commissioner

Acknowledgments

Nursing Facilities in Massachusetts 1989-1993 is the result of the collaborative efforts of Rate Setting Commission staff, staff of sister state agencies, policy makers, and industry representatives. During key stages of this project, Commission staff met with these individuals to share information and solicit advice and comments on the materials. The Commission would like to thank those who took the time to review the document and offer their recommendations: Lucie Rice and Merlin Southwick from the Association of Massachusetts Homes and Services for the Aging; Gary Abrahams, Loren Lidsky and W. Scott Plumb from the Massachusetts Federation of Nursing Homes; Ira Lipshutz, Executive Director of The Armenian Nursing Home; Donald M. Powell, Executive Director of Sherrill House; Alan Balsam, Ph.D., Paul I. Dreyer, Ph.D., Daniel J. Friedman, Ph.D., and Christine A. Payne from the Department of Public Health; Staff of the Senior Care Plan and Operations Units of the Division of Medical Assistance, Executive Office of Health and Human Services; Tom Lunnap Chung, Ph.D. from the Executive Office of Elder Affairs; David Webster and Kimberly Zieselman from the Joint Committee on Health Care; and Carol Maloney from the Joint Committee on Human Services and Elderly Affairs.

This report does not necessarily reflect the views of the individuals acknowledged.

Table of Contents

Acknowledgments ◆ iii

Table of Contents ◆ v

Preface: A Word About the Rate Setting Commission ◆ ix

Narrative ◆ 1

- Introduction 1
- Data Sources and Caveats 3
- Highlights 5
- Potential Applications of the Data 9
- Closing 13

Tables

Section 1: Facility Demographics, Utilization, and Occupancy (1989 - 1993) ◆ 15

Table 1.1: Distribution of Nursing Facilities
Table 1.2: Distribution of Nursing Facility Beds
Table 1.3: Mean Nursing Facility Total Utilization Percentage
Table 1.4: Number of Nursing Facilities Reporting Resident Occupancy for Identified Resident-Funding Sources
Table 1.5: Mean Nursing Facility Bed-Day Occupancy Percentage for Identified Resident-Funding Sources
Table 1.6: Mean Nursing Facility Bed-Day Occupancy Percentage by Facility Profit Status for Identified Resident-Funding Sources
Table 1.7: Mean Nursing Facility Bed-Day Occupancy Percentage by Facility Management Structure for Identified Resident-Funding Sources

Section 2: Expenses, Revenues, and Financial Structure (1989 - 1993) ◆ 23

Table 2.1: Median Nursing Facility Total Operating Expense Per Diem
Table 2.2: Median Nursing Facility Administrative Expense Per Diem
Table 2.3: Median Nursing Facility Director of Nurses Expense Per Diem
Table 2.4: Median Nursing Facility Nursing Expense Per Diem
Table 2.5: Median Nursing Facility Variable Expense Per Diem
Table 2.6: Median Nursing Facility Fixed Expense Per Diem
Table 2.7: Median Nursing Facility Other Operating Expense Per Diem
Table 2.8: Nursing Facilities Reporting Nursing Pool Expenses
Table 2.9: Median Nursing Facility Employer's Health Insurance Expense per $100 of Employee Gross Wages

Table 2.10: Median Nursing Facility Employer's Worker's Compensation Expense per $100 of Employee Gross Wages
Table 2.11: Median Nursing Facility Employer's Pension Plan Expense per $100 of Employee Gross Wages
Table 2.12: Median Nursing Facility Total Revenue Per Diem
Table 2.13: Median Nursing Facility Medicare Revenue Per Diem
Table 2.14: Median Nursing Facility Private Revenue Per Diem
Table 2.15: Median Nursing Facility Medicaid Revenue Per Diem
Table 2.16: Median Nursing Facility Quick Ratio Values
Table 2.17: Median Nursing Facility Current Ratio Values
Table 2.18: Median Nursing Facility (Long-Term) Debt to Asset Ratio Values
Table 2.19: Median Nursing Facility Debt to Asset Ratio Values
Table 2.20: Median Nursing Facility Return on Assets Ratio Values

Section 3: Resident Demographics and Clinical Characteristics (1991 - 1993) ◆ 45
Table 3.1: Proportion of Medicaid-Funded Nursing Facility Residents by Demographic Indicators
Table 3.2: Proportion of Medicaid-Funded Nursing Facility Residents by Health and Behavior Indicators
Table 3.3: Proportion of Medicaid-Funded Nursing Facility Residents for Certain Activities of Daily Living (ADLs)
Table 3.4: Proportion of Medicaid-Funded Nursing Facility Residents by Number of ADL Dependencies
Table 3.5: Mean MMQ Score for Medicaid-Funded Nursing Facility Residents by Demographic Indicators
Table 3.6: Ten Most Frequent Primary Diagnoses of Medicaid-Funded Nursing Facility Residents
Table 3.7: Proportion of Medicaid-Funded Nursing Facility Residents with a Primary Diagnosis of Alzheimer's Disease by Demographic Indicators
Table 3.8: Proportion of Medicaid-Funded Nursing Facility Residents with a Primary Diagnosis of Alzheimer's Disease by Number of ADL Dependencies

Appendices

Appendix 1: Definitions of Category Groups ◆ 55

Appendix 2: Map of Massachusetts Identifying Dept. of Public Health's Health Service Areas ◆ 57

Appendix 3: Statistical Applications Used in This Report ◆ 59

Appendix 4: Definitions for the Variables Presented in This Report ◆ 63

Appendix 5: Management Minutes Questionnaire ◆ 73

Massachusetts Rate Setting Commission
Two Boylston Street
Boston, Massachusetts 02116

(617) 451-5330 (Voice)
(617) 451-1878 (Fax)

Staff for this Report

Authors: Mona E. Liblanc and Amy M. Lischko
Jean Devereaux and David N. Mishol, Bureau of Long Term Care Facilities

Contributors, Bureau of Long Term Care Facilities: Frederick A. Beebe, Dana D' Eramo, Kimberly O'Brien, James Sullivan, Tracy Swain and the Audit Units

Other Contributors: the Bureaus of Ambulatory Care and Systems Development; and Kevin C. Ahern, Legal Department

Production and Distribution: Dorothy Barron, Harry O. Lohr, Jr. and Heather Shannon, Office of Communications; Kevin Prior, Public Information

Nursing Facilities in Massachusetts 1989-1993
Copyright © February 1995 Massachusetts Rate Setting Commission

Preface: A Word About the Rate Setting Commission

The mission of the Massachusetts Rate Setting Commission is to promote for the citizens of the Commonwealth cost effective systems for delivering high quality, accessible health care. Historically, the Commission fulfilled this mission primarily as a regulatory agency, establishing rates of payment for health care services purchased by the Commonwealth and workers' compensation insurance.

In addition, the agency has established a comprehensive health care information program for policy-makers, providers, and purchasers of health care in Massachusetts. The information provided is intended to enhance the decision-making of health care system players.

An Expanded Mandate for Health Care Information

The state's Health Care Financing Act, widely known as Chapter 495, expanded the Commission's information program. This law altered the rules of reimbursement and explicitly instructed the Commission to support and evaluate the effectiveness of these rules.

Chapter 495 embodies the state's commitment to competition in health care, relying on market forces to establish prices and promote efficiency in the provision of hospital services.

However, in order for this or any market to function properly, purchasers

and providers must have accurate and useful information to develop strategies to improve the efficiency and effectiveness of services.

This report represents the continuation of an ongoing process—implementing the Commission's expanded mission to provide information, analytical tools, and data to a new and diverse audience.

A Program for Improvement

As part of its health care information program, the Commission is publishing a series of reports meeting the need for information relevant to the rapidly evolving Massachusetts health care marketplace. These reports focus on various health policy and market issues. The Commission intends these reports to serve as a catalyst for beginning a dialogue among health care market players who will work cooperatively to improve the health care delivery system in Massachusetts.

Nursing Facilities in Massachusetts

This report, Nursing Facilities in Massachusetts (1989-1993), is intended to serve as a reference tool for policy-makers and service providers who may use the data presented to develop a common understanding of the nursing home industry in Massachusetts. Ultimately, the data should serve as a catalyst for discussions on the integration of acute and long term care service delivery for the elderly in this state.

Health Care Costs in Massachusetts

Published in December 1992, Health Care Costs in Massachusetts addresses a primary objective of the Commission's health care information program—to identify the forces that are driving costs upward and to assist in the development of strategies to reduce them. Toward this end, this extensive report presents a formal review of trends in health care spending, acute hospital unit costs, and the utilization of inpatient hospital services.

Health Care Policy Projects

The Commission's policy monitoring projects advise state government policy makers of the present health care environment, and suggest where policy investigation or action may be appropriate. Current monitoring efforts are in three areas:

Health insurance premiums and enrollment trends are indicators used to measure the cost of providing health care. Analysis of these trends also reveals clues about how to better control costs.

The hospital market is influenced by the provisions of Chapter 495 and by national and local trends. In the current competitive environment, the Commission is monitoring the dynamic changes that are occurring in the hospital industry and is assessing the effects of these changes on hospital efficiency, spending by public and private purchasers and the financial health of hospitals.

Access to services continues to be a policy priority in the competitive marketplace. Monitoring access and measuring the changing availability of services provides early warning if there are increasing barriers to quality care.

Health Care Market Projects

The Rate Setting Commission's market projects supply information to help identify opportunities to improve both the efficiency and effectiveness of the health care system in Massachusetts. The goal is for market players to use this information

to modify their activities and effect positive change in the delivery of health care services.

Preventable Hospitalization, published in January 1994, is the product of a market project. This report focuses on an analysis of the incidence of hospitalizations for conditions that can be managed in a primary care setting. It introduces a valuable tool that health care purchasers and providers can use to measure how effectively the health care system delivers care, to guide efforts to improve the system and to evaluate the success of those efforts.

Already, market players have joined together in using the information presented on preventable hospitalization to improve the system of care in several areas across the Commonwealth.

Expertise & Commitment

Expertise for the Commission's health care information projects is drawn from throughout the agency.

Each study is supported by Rate Setting Commission staff expressly charged with carrying out the agency's mission—an expanded mandate aimed at successfully demonstrating the Commonwealth's commitment to making quality health care accessible and affordable for everyone.

The Commission at a Glance

The Massachusetts Rate Setting Commission is an administrative agency within the Executive Office of Health and Human Services (EOHHS). The agency is responsible for each of the following activities:

Health Care Information

- the analysis and publication of health cost and utilization information for use by lawmakers, state officials, providers, insurers, consumers and other interested parties in the formulation of public policy and the provision and purchase of health care services.

Rate-Setting & Oversight

- establishing rates of payment for health care and long-term care services purchased by the Commonwealth of Massachusetts,
- oversight of the acute care hospital payment system,
- non-acute care hospital charge regulation, and
- workers compensation rates.

Introduction

In the United States, acute and long-term care services are provided by two separate systems; each with distinct providers, treatment settings, and financing mechanisms. The primary providers of care in acute settings (hospital and ambulatory centers) are physicians, with Medicare providing most the funding for elderly clients. Conversely, family members and nursing staff are the principal providers of care for elderly persons residing at home or receiving care in a nursing facility. The Medicaid program funds a large portion of the care received in nursing facilities.

Under the current structure, it is often difficult for providers and payers to coordinate care and ensure its quality, while controlling costs across the diverse service settings. It has been even more difficult for policy-makers to motivate the various providers and payers to agree on how to address the shortcomings in the current health care delivery system. The task of developing a coordinated system of care, providing integrated, high-quality, cost-efficient services, looms too large and complex for any individual provider or payer to confront. However, if constructive, thoughtful decisions regarding the delivery of health care services to the elderly are to be made, it is necessary for all parties to begin with sound information about these services, across all settings and provider types.

Health care reform has been the focus of much debate on both federal and state levels. However, long-term care services have not been at the forefront of many of the major proposals coming from Capitol Hill. In fact, most of the proposals barely address this segment of the nation's health care system. Yet, nearly one-third of the nation's current Medicaid expenditures are consumed by long-term care services.[1] Care provided in institutional settings, primarily nursing facilities, constitutes approximately 85% of the Medicaid spending for long-term care.[2] It is anticipated that federal and state governments will be required to devote an increasing share of their budgetary resources to funding Medicaid-supported long-term care services.

Providers in the Commonwealth are very concerned about any health care reform initiatives as federal and state programs are their major funding sources. It is estimated that the Medicaid program in Massachusetts will fund $1.5 billion in nursing home services for FY94 (7/1/93-6/30/94). During 1993, the Medicaid-funded nursing facilities represented in this study (n=512) reported that Medicaid-funded residents accounted for 61% of their revenue, with the Medicare program contributing an additional 10%. Increasing fiscal pressure on both the purchasers and the providers, coupled with the aging of the nation's population, will motivate policy-makers to address the needs of the elderly for long-term care services in the near future.

This report was developed to provide a centralized source of key information on the Commonwealth's nursing facilities. It presents descriptive analyses of the Medicaid-funded nursing facilities in the Commonwealth of Massachusetts for 1989 through 1993. The data elements were selected in order to fill an often noted gap in the available information about this industry. Aggregate data are provided on demographic and financial characteristics of the facilities, total utilization and occupancy by payment source, and on the demographic and clinical characteristics of the Medicaid-funded residents in these facilities.

It is intended that this report serve as a reference tool for those interested in learning more about the operation of nursing facilities and for those collaborating with nursing facilities around the diversity of health care issues prominent in the Commonwealth today. In a broader sense, this report can be a catalyst for discussion regarding the integration of acute and long-term care service delivery for the elderly residents of the Commonwealth.

The Commission is committed to providing accurate data which informs purchasers, providers, policy-makers, and health care users in order to promote value in each of the health care delivery systems of the Commonwealth.

Endnotes for the Introduction

1. The Urban Institute, 1994, prepared for the Kaiser Commission on the Future of Medicaid, conference proceedings from "Heath Reform Under Construction: States at Work," Aug. 14, 1994.

2. Ibid.

Data Sources & Caveats

The facility-level data were drawn from the financial reports (RSC-1 and RSC-2 Cost Reports) filed with the Massachusetts Rate Setting Commission, on an annual basis. Many of our reviewers noted that the cost reporting documents' primary function as the basis for Medicaid reimbursement, casts the fiscal data in a light most favorable for funding. Not that data are inaccurate, but that Generally Accepted Accounting Principles (GAAP) do allow a degree of discretion which can introduce a similar degree of variability in the reporting in these documents.[1]

It is important to note that the variables developed for this report do not directly correspond to the cost centers used by the Commission for Medicaid reimbursement. Therefore, the results or trends presented in this report can not be directly or solely attributed to the Commonwealth's reimbursement system for Medicaid-funded nursing home residents for the years 1989 through 1993. All revenue per diem variables measure the daily income received per resident to fund the provision of nursing facility services. The values presented are an aggregate measure for all persons funded by a particular source and do not reflect severity indexing adjustments.

The resident-level data were drawn from the Management Minute Questionnaires (MMQs) filed with the Massachu-

setts Division of Medical Assistance for the fourth quarters of 1991, 1992 and 1993. The MMQ measures resident acuity by assigning a "minute value" to each of the services provided to residents in a nursing facility.[2]

These quarterly assessments are only required for the Medicaid-funded residents in a nursing facility. Therefore, the resident demographic and clinical characteristic data presented here represent only the Medicaid-funded residents in the facility during the fourth quarter of each year, and may not be representative of the clients which are funded by other sources, either public or private.

Particular caution must be taken when reviewing the resident acuity data presented in this report. The Management Minutes Questionnaire (MMQ) was not implemented as the statewide Medicaid-funded resident assessment instrument until January of 1991. Thus, score increases occurring between 1991 and 1992 (4.7%) may reflect a combination of a 'learning curve' phenomenon associated with a new form as well as actual increases in the care needs of Medicaid-funded residents over time. The rate of increase in MMQ scores slowed after the second year of statewide implementation, resulting in a 1.3% increase between 1992 and 1993 average scores.

The sample size for each year represents approximately 99% of all Massachusetts nursing facilities with Medicaid-funded residents which is approximately 95% of all nursing facilities in the Commonwealth. All data have been thoroughly reviewed and extreme values which were determined to be reporting errors were removed prior to analysis. The tables provide either the mean or median for each variable, and the standard deviation where appropriate. Means are provided for variables with a discrete range of possible values (e.g. utilization percentages) and medians are provided for all other variables (e.g. costs). Given the strong influence that extreme values can have on the mean of a group, as described in Appendix 3, it was determined that median values were more appropriate measures for the later group of variables.

This report is intended to be descriptive in nature, thus, rigorous statistical testing was not undertaken to determine the significance of year-to-year, between-group, or within-group variation. As the data have not been adjusted to account for year-to-year inflation, references to the percent of change in values between two periods should be considered nominal. Though care and consideration must be taken when drawing conclusions from these data, the report provides necessary demographics about the nursing facilities in the Commonwealth, their financial performance, and their Medicaid-funded resident populations.

Endnotes for Data Sources & Caveats

1. Sample Cost Report documents and instructions are available from the Commission, upon request.

2. A sample Management Minute Questionnaire is provided in Appendix 5 of this report.

Highlights

The majority of this report is dedicated to tabular presentations of central tendency statistics (mean or median) on annual aggregate data. Values for the industry as a whole and for selected groupings are provided. Facility location [Health Service Area (HSA)]; licensed level of care (Skilled, Intermediate, Multi-Level, Pediatric); profit status (non-profit or for-profit); and management structure (independent or management company owned/operated) are the categories defined for this report. The appendices provide definitions of the groupings (Appendix 1); a map of Massachusetts showing the boundaries for each Department of Public Health HSA (Appendix 2); narrative on the statistics presented in the tables (Appendix 3); the formula for each variable (Appendix 4); and a sample Management Minutes Questionnaire (Appendix 5).

The tables are organized in sections, by topic. While it is inappropriate to make specific conclusions about year-to-year trends, between-group differences, or within-group variation, without applying the appropriate tests for statistical significance, general remarks about the industry can be made.

Facility Demographics, Utilization, and Occupancy (1989-1993)

Facility Demographics. The number of facilities with Medicaid-funded resi-

dents remained consistent between 1989 and 1993; with only moderate shifts in the proportion of facilities reporting for-profit versus non-profit status and those which were owned/operated by a management company versus independently operated.

Utilization and Occupancy. Overall utilization of the available nursing facility bed-supply fluctuated slightly during the five-year period (96.8% in 1989 versus 96.1% in 1993), while the total supply of beds increased by at least 5% (524 facilities with 47,813 beds in 1989 versus 514 facilities with 50,205 beds in 1993). However, there were shifts in the proportion of residents funded by private and various public sources.

The Medicaid program remained the primary funding source for the majority of nursing facility residents (73%), while the mean proportion of residents funded by the Medicare program rose from 2.2% in 1989 to 6.9% in 1993. During the same time period, the mean proportion of privately-funded residents dropped from 21.1% to 16.6%.

Expenses, Revenues, and Financial Structure (1989-1993)

Expenses. There was a nominal increase in the median per diem Total Operating Expense of approximately 31% between 1989 and 1993. The nominal rates of increase for the median per diem Variable Expense (42%) and the median per diem Administrative Expense (45%) were nearly twice that for the median per diem Nursing Expense (24%). The proportion of facilities hiring nursing pool employees, which had reached almost 80% in 1989, dropped to 54.5% by 1993. Analysis of employer expenditures on employee health insurance and pension benefits for 1989 through 1993 (measured in dollars spent per $100 of gross employee wages) indicates that non-profit facilities and those which were independently operated consistently spent more than for-profit facilities and those owned/operated by a management company, in each year. In addition, the statewide median for employer's spending on worker's compensation insurance per $100 in gross employee wages increased by 31.2% between 1989 and 1993.

Revenues. The median per diem for Total Revenue rose by 30% between 1989 and 1993. Those facilities which were owned/operated by a management company experienced a 24% increase in their median Total Revenue; for those independently operated, the median Total Revenue increased 43% between 1989 and 1993. The five-year nominal rate of increase in the median per diem revenue received varied greatly across the three major funding sources; Medicare at 51%, private at 39%, and Medicaid at 27%.[1]

Financial Structure. The financial structure analyses undertaken, though limited in scope, indicates a positive trend in the fiscal performance of nursing facilities in the Commonwealth, for 1989 through 1993. The data indicate that nursing facilities experienced increased liquidity and slightly lower debt positions by 1993. In addition, the industry's earning power per dollar of assets remained relatively steady over the five-year period, with a noticeable improvement between 1992 and 1993. The marked improvement in the

industry's financial structure appears to have occurred after 1990.

Resident Demographics and Clinical Characteristic (1991-1993)

Resident Demographics. The demographic distribution of the Commonwealth's Medicaid-funded residents by gender, race, and age is comparable to other industrialized states. The majority of Medicaid-funded nursing home residents are white, female, and over 80 years of age.

Clinical Characteristics. Resident acuity, as measured by the fourth quarter Management Minute Questionnaires (MMQs) submitted to the Division of Medical Assistance for Medicaid-funded residents, increased 6.1% between 1991 and 1993. By 1993, the industry-wide average MMQ score for this population had risen to 191.1 minutes.

When the Medicaid-funded resident group is segregated by gender, the average MMQ score for women was consistently higher than that for men for each year studied. However, the rate of increase between 1991 and 1993 varied (women 5.8% versus men 7.0%), reducing the difference between the groups' mean Management Minutes scores by 1993.

Endnote for Highlights

1. These values were not adjusted for resident severity indexing, weighted by volume of use, nor adjusted for year-to-year inflation.

Potential Applications of the Data

Data in this report are presented in tabular format to maximize the readers' flexibility in applying the data. The presentation of "raw data" allows readers to aggregate and analyze selected variables to meet their individual needs.

Potential applications of the data are provided in the following examples. The examples were developed to illustrate the usefulness of accurate and complete data which is representative of this sector of the health care industry. In addition, the items selected address basic questions regarding bed-need, pension benefit spending, and the proportion of spending attributable to various cost centers in the nursing home industry. See pages 10, 11, and 12.

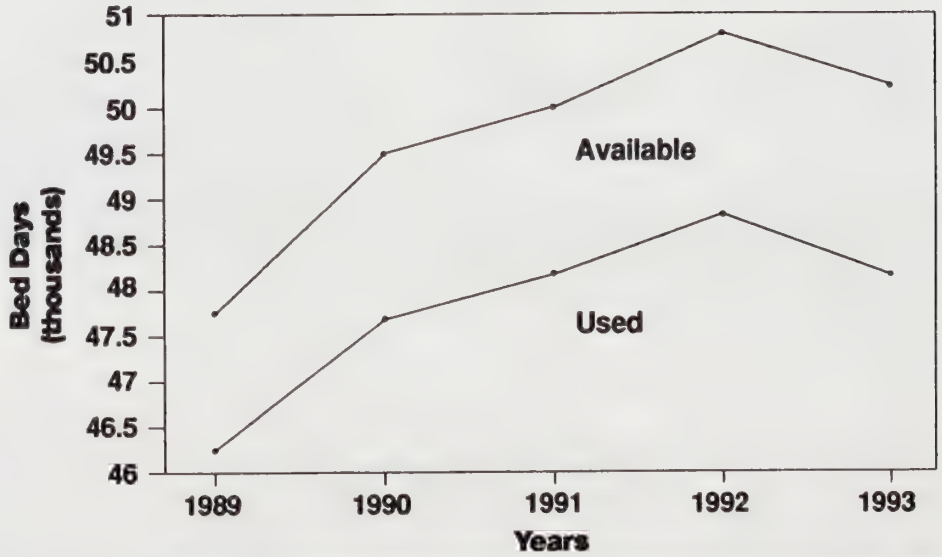
Example 1 Compare the changes in available bed-days and total bed-day utilization for 1989 through 1993. **Step 1**: Using Tables 1.2 and 1.3 (pages 17 and 18), select the total bed-days available and the utilization percentages, statewide, for each year. Calculate the "Estimated Bed-Days Used" by applying the utilization percentage to the "Bed-Days Available" [illegible]s for each year. **Step 2**: Plot the "Available Bed-Days" and the "Estimated Bed-Days Used" for each year.

Step 1:

	1989	1990	1991	1992	1993
Nursing Facility Bed-Days Available	47,813	49,634	49,952	50,768	50,205
Mean Total Utilization Percentage	96.8%	96.2%	96.6%	96.3%	96.1%
Estimated Bed-Days Used	46,283	47,748	48,254	48,890	48,247

Step 2:

Comparison of Total Nursing Facility Bed-Day Availabilty vs. Utilization



Example 1 It appears that bed-day utilization kept pace with available bed-days, as the latter fluctuated over the five-year period.

Example 2 Compare 1993 median employer spending on pension benefits per $100 of gross employee wages by profit status and management type. **Step 1**: Using Table 2.11 (page 34), select the 1993 median dollar values for the profit status and management structure categories. **Step 2**: Plot the points for each category within Profit Status and Management Structure in a bar graph.

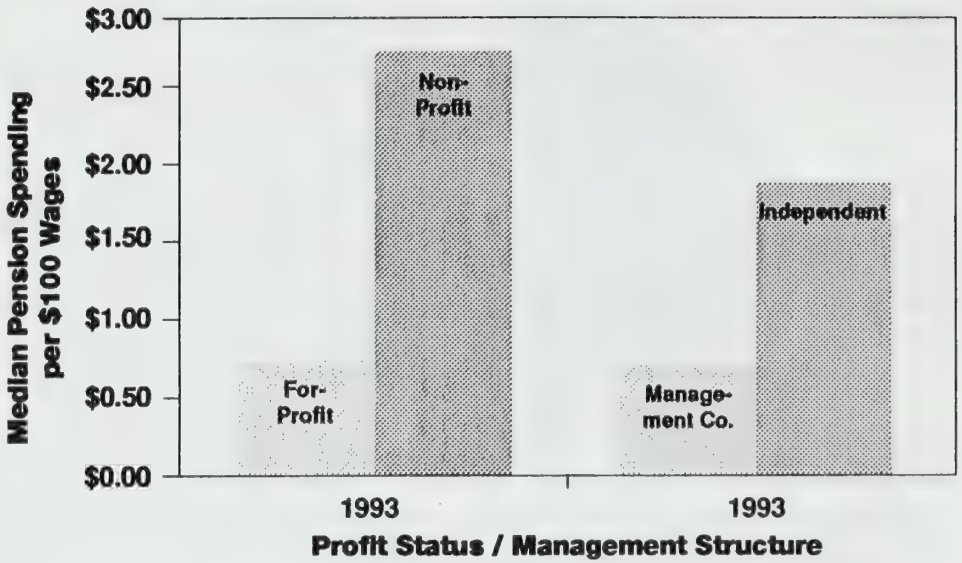
Step 1:

1993 Median Employer Spending on Pension Benefits per $100 of Gross Employee Wages

Profit Status:	
For-Profit	$0.73
Non-Profit	$2.77
Management Structure:	
Management Company	$0.70
Independent	$1.85

Step 2:

Median Employer Costs for Pensions 1993 By Profit Status and Management Structure



Example 2 It appears that Non-Profit and Independently owned/operated facilities spent more on pension benefits per $100 of gross employee wages than did For-Profit and Management Company owned/operated facilities in 1993. Such higher costs in personnel areas may account for overall higher costs in the areas which are most labor-intensive.

Example 3 Determine the median proportion of each 1993 nursing facility dollar spent on the various expense variables. **Step 1:** Using Tables 2.2 through 2.7 (pages 25 - 30), select the 1993 statewide median per diem dollar values for each of the expense variables. Calculate the proportion that each median is of the sum of the medians **Step 2:** Present the percentages in a pie graph.

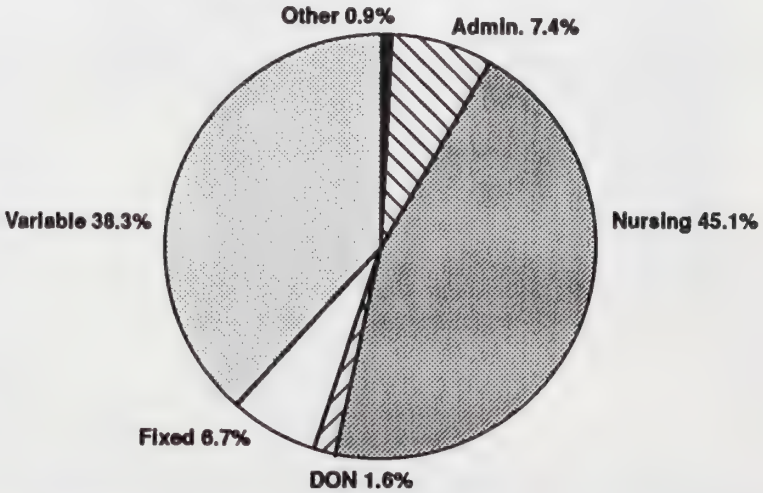
Step 1:

Statewide

	1993 Median	% of the Sum of the Median
Administrative Costs	$ 7.89	7.4%
Nursing Costs	$ 48.35	45.1%
Director of Nurses (DON) Costs	$ 1.70	1.6%
Fixed Costs	$ 7.15	6.7%
Variable Costs	$ 41.00	38.3%
Total Other Operating Costs	$ 1.00	0.9%
Sum	$ 107.19	100.0%

Step 2:

Median Proportion of Nursing Facility Spending per Expense Category (1993)



Example 3 It appears that Nursing (45.1%) and Variable (38.3%) costs consumed the bulk of nursing facility expenditures, in 1993. Administrative (7.4%) and Fixed (6.7%) costs combined consumed almost 15% of each dollar spent in nursing facilities, during the same year. The impact of cost efficiency efforts in the Variable and Nursing areas would have greater impact than the same measures would have in any other of the cost centers.

Closing

In Massachusetts, as in much of the nation, acute care providers (e.g. hospitals) are changing the way they deliver care and the how they position themselves in a competitive marketplace. That industry has become one of continual vertical and horizontal integration; with mergers, acquisitions and the closing of facilities occurring more frequently. New strategies and approaches for delivering high-quality, cost-efficient care are constantly emerging.

In contrast, nursing homes have experienced relative stability during the past five years. While they have experienced some degree of change (resident acuity increases concomitant with shorter hospital stays and a new, prospective, case-mix payment system), it is only in recent years that payers of nursing facility care, both public and private, have begun to question whether other models for service delivery and payment could reduce the cost and improve the quality of care.

Payers are beginning to investigate whether less costly, more appropriate, settings are available for delivering the kind of care which, to date, has been almost exclusively provided in nursing homes. They also are looking for ways to improve the integration of the various services necessary to ensure the continuity of care provided for the elderly. As local and national demographics continue to

shift toward an older, more frail society, these issues will gain momentum and come to the forefront of the health care debate.

Health care services for the elderly also are evolving. Each entity which has a stake in that process must have information on the existing network of providers as well as a vision of what is possible in the future to assure that any changes to the current system of service are positive ones.

In order to make the best choices and decisions, complete and accurate information is essential. Currently, policy-makers are concerned by the observation that certain health care providers are able to deliver 'quality' care at a fraction of the cost of other 'comparable' providers. At the same time, health care providers and client-advocacy groups cite 'quality' as the primary factor contributing to variability in the cost of care. Of course, some variation in cost and service provision practices is anticipated even when 'comparable, quality care' is provided in various settings.

Until now, there has been a dearth of information available to address what has been seen as extreme variation across nursing facilities in the long-term care industry. The data presented in this report can serve as a first step in a process of analyzing and understanding the structure of this industry, and can perhaps be used by providers to target areas for efficiency improvements.

It is anticipated that this report will be a catalyst for thoughtful discussion about the nursing home industry. Legislators and policy-makers may use these data to develop a common understanding of this sector of the health care system and be better prepared to address the concerns of the providers and purchasers. Client-advocates may look to this report for data on who is served by these facilities and how best to meet the needs of those currently in institutional settings for long-term care. Those in the field of managed health care may look to this report to begin to assess the role of these resources, as the various aspects of health care become more integrated and interdependent.

What is the most cost effective way to deliver comparable services across different settings? How can we ensure that the care being provided is of good quality? How do we decide who is responsible for funding this care? This report does not provide answers to these difficult questions; it does provide information that can assist the various stakeholders in this system to frame the issues in a meaningful way so that a thoughtful and compassionate delivery system for the most vulnerable of our population can evolve.

Section 1: Facility Demographics, Utilization and Occupancy (1989 - 1993)

Table 1.1 Distribution of Nursing Facilities (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Statewide	524	100%	530	100%	521	100%	529	100%	514	100%
Health Service Area										
HSA I	73	13.9%	74	14.0%	73	14.0%	74	14.0%	71	13.8%
HSA II	70	13.4%	70	13.2%	66	12.7%	68	12.9%	70	13.6%
HSA III	46	8.8%	47	8.9%	47	9.0%	48	9.1%	46	9.0%
HSA IV	175	33.4%	175	33.0%	174	33.4%	175	33.1%	166	32.3%
HSA V	104	19.8%	106	20.0%	104	20.0%	105	19.8%	104	20.2%
HSA VI	56	10.7%	58	10.9%	57	10.9%	59	11.2%	57	11.1%
Level of Care										
Skilled	56	10.7%	55	10.4%	64	12.3%	81	15.3%	82	16.0%
Intermediate	174	33.2%	167	31.5%	156	29.9%	150	28.4%	133	25.9%
Multi-level	290	55.3%	304	57.4%	297	57.0%	294	55.6%	296	57.5%
Pediatric	4	0.8%	4	0.8%	4	0.8%	4	0.8%	3	0.6%
Profit Status										
For-Profit	434	82.8%	421	79.4%	402	77.2%	424	80.2%	402	78.2%
Non-Profit	90	17.2%	109	20.6%	119	22.8%	105	19.8%	112	21.8%
Management Structure										
Management Co.	243	46.4%	233	44.0%	226	43.4%	239	45.2%	203	39.5%
Independent	281	53.6%	297	56.0%	295	56.6%	290	54.8%	311	60.5%

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing RSC-1 documents with the MRSC; statewide and by category.
% values represent the proportion of facilities represented in each category.

Table 1.2 Distribution of Nursing Facility Beds (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Statewide	47,813	100%	49,634	100%	49,952	100%	50,768	100%	50,205	100%
Health Service Area										
HSA I	7,222	15.1%	7,561	15.2%	7,665	15.3%	7,824	15.4%	7,785	15.5%
HSA II	6,476	13.5%	6,514	13.1%	6,335	12.7%	6,478	12.8%	6,568	13.1%
HSA III	4,575	9.6%	4,657	9.4%	4,737	9.5%	4,795	9.4%	4,723	9.4%
HSA IV	16,201	33.9%	16,724	33.7%	16,583	33.2%	16,904	33.3%	16,281	32.4%
HSA V	8,893	18.6%	9,639	19.4%	9,863	19.7%	9,762	19.2%	9,948	19.8%
HSA VI	4,446	9.3%	4,539	9.2%	4,769	9.6%	5,005	9.9%	4,900	9.8%
Level of Care										
Skilled	4,241	8.9%	4,590	9.2%	5,706	11.4%	7,199	14.2%	7,504	14.9%
Intermediate	8,641	18.1%	8,175	16.5%	7,883	15.8%	7,627	15.0%	6,540	13.0%
Multi-level	34,430	72.0%	36,368	73.3%	35,862	71.8%	35,439	69.8%	35,824	71.4%
Pediatric	501	1.0%	501	1.0%	501	1.0%	503	1.0%	337	0.7%
Profit Status										
For-Profit	37,898	79.3%	37,515	75.6%	36,608	73.3%	38,755	76.3%	37,813	75.3%
Non-Profit	9,915	20.7%	12,119	24.4%	13,344	26.7%	12,013	23.7%	12,392	24.7%
Management Structure										
Management Co.	25,528	53.4%	24,969	50.3%	24,433	48.9%	25,561	50.3%	21,743	43.3%
Independent	22,285	46.6%	24,665	49.7%	25,519	51.1%	25,207	49.7%	28,462	56.7%

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of nursing beds for facilities filing RSC-1 documents with the MRSC; statewide and by category.
% values represent the proportion of facilities represented in each category.

Table 1.3 Mean Nursing Facility Total Utilization Percentage (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	(mean)	(n)	(mean)	(n)	(mean)	(n)	(mean)	(n)	(mean)
Statewide	508	96.8%	518	96.2%	515	96.6%	516	96.3%	513	96.1%
Health Service Area										
HSA I	71	96.4%	72	96.5%	72	97.0%	73	95.8%	71	95.6%
HSA II	69	97.7%	68	97.6%	65	97.7%	65	97.5%	69	96.5%
HSA III	46	97.7%	46	97.5%	47	97.6%	47	96.6%	46	96.2%
HSA IV	171	96.7%	173	95.7%	172	96.3%	170	95.8%	166	96.0%
HSA V	96	95.8%	104	94.8%	102	95.4%	104	96.4%	104	96.1%
HSA VI	55	97.6%	55	97.5%	57	97.0%	57	97.0%	57	96.7%
Level of Care										
Skilled	48	95.8%	52	95.3%	61	95.5%	75	95.4%	82	94.3%
Intermediate	172	96.2%	164	95.4%	156	95.7%	147	95.4%	132	96.5%
Multi-level	284	97.3%	298	96.8%	294	97.2%	290	97.0%	296	96.5%
Pediatric	4	98.5%	4	98.9%	4	99.2%	4	97.8%	3	97.7%
Profit Status										
For-Profit	423	96.9%	414	96.3%	399	96.6%	416	96.4%	401	96.5%
Non-Profit	85	96.2%	104	95.9%	116	96.4%	100	96.2%	112	94.6%
Management Structure										
Management Co.	234	97.3%	228	96.8%	225	97.0%	234	96.8%	202	96.4%
Independent	274	96.4%	290	95.7%	290	96.3%	282	96.0%	311	96.0%

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n represents the number of facilities reporting accurate utilization data; those <10% or >100% were excluded.
% values represent the mean utilization percentage for all facilities reporting accurate occupancy data; statewide and by category.

Table 1.4 Number of Nursing Facilities Reporting Resident Occupancy for Identified Resident-Funding Sources (1989 - 1993)

	1989 (n)	1990 (n)	1991 (n)	1992 (n)	1993 (n)
Statewide	524	530	521	528	513
Payment Source					
Medicaid	521	528	518	524	511
Non-Mass. Medicaid	25	29	32	32	37
Medicare	175	314	332	368	390
Commission of the Blind	323	312	303	312	306
Veteran's Administration	133	136	122	130	129
Private	515	517	505	516	502

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities reporting payment for residents receiving nursing home services by the indicated sources.

Table 1.5 Mean Nursing Facility Bed-Day Occupancy Percentage for Identified Resident-Funding Sources (1989 - 1993)

Statewide	1989 (n) = 524	1990 (n) = 530	1991 (n) = 521	1992 (n) = 528	1993 (n) = 513
	mean occupancy %	mean occupancy %	mean occupancy %	mean occupancy %	mean occupancy %
Payment Source					
Medicaid	72.8%	74.2%	74.5%	73.5%	72.3%
Non-Mass. Medicaid	1.4%	1.6%	1.8%	1.8%	2.0%
Medicare	2.2%	2.0%	2.8%	4.7%	6.9%
Commission of the Blind	1.5%	1.5%	1.4%	1.4%	1.3%
Veteran's Administration	1.0%	1.0%	1.0%	1.0%	0.9%
Private	21.1%	19.7%	18.5%	17.6%	16.6%

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the mean bed-day occupancy for all facilities reporting resident days funded by the indicated payment source.
Mean occupancy percentages are calculated by dividing the number of resident days for each payment source per facility by the total number of resident days for all payment sources per facility; including zero values.

Table 1.6 Mean Nursing Facility Bed-Day Occupancy Percentage by Facility Profit Status for Identified Resident-Funding Sources (1989 - 1993)

Statewide	1989 (n) = 524 mean occup. %		1990 (n) = 530 mean occup. %		1991 (n) = 521 mean occup. %		1992 (n) = 528 mean occup. %		1993 (n) = 513 mean occup. %	
Facility Profit Status	For Profit (n)=434	Non Profit (n)=90	For Profit (n)=421	Non Profit (n)=109	For Profit (n)=402	Non Profit (n)=119	For Profit (n)=423	Non Profit (n)=105	For Profit (n)=401	Non Profit (n)=112
Payment Source										
Medicaid	73.7%	68.4%	75.3%	70.1%	75.6%	70.6%	74.5%	69.4%	74.0%	66.8%
Non-Mass. Medicaid	1.7%	0.1%	2.0%	0.0%	2.4%	0.0%	2.2%	0.0%	2.3%	0.1%
Medicare	2.1%	3.0%	1.6%	3.6%	2.3%	4.6%	4.1%	7.5%	5.7%	11.0%
Commission of the Blind	1.4%	2.1%	1.4%	1.8%	1.3%	1.7%	1.3%	1.7%	1.3%	1.6%
Veteran's Administration	0.9%	1.5%	0.9%	1.3%	0.9%	1.3%	0.9%	1.4%	1.0%	0.9%
Private	20.2%	24.9%	18.8%	23.2%	17.5%	21.8%	17.0%	20.0%	15.7%	19.6%

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the mean bed-day occupancy for all facilities reporting resident days funded by the indicated payment source.
Mean occupancy percentages are calculated by dividing the number of resident days for each payment source per facility by the total number of resident days for all payment sources per facility; including zero values.

Table 1.7 Mean Nursing Facility Bed-Day Occupancy Percentage by Facility Management Structure for Identified Resident-Funding Sources (1989 - 1993)

Statewide	1989 (n) = 524 mean occup. %		1990 (n) = 530 mean occup. %		1991 (n) = 521 mean occup. %		1992 (n) = 528 mean occup. %		1993 (n) = 513 mean occup. %	
Facility Management Structure	Mgt. Co. (n)=243	Indep. (n)=281	Mgt. Co. (n)=233	Indep. (n)=297	Mgt. Co. (n)=226	Non (n)=295	Mgt. Co. (n)=238	Indep. (n)=290	Mgt. Co. (n)=202	Indep. (n)=311
Payment Source										
Medicaid	70.2%	75.0%	72.1%	75.8%	72.5%	76.0%	71.8%	74.9%	72.1%	72.5%
Non-Mass. Medicaid	2.9%	0.2%	3.0%	0.6%	3.4%	0.6%	2.1%	1.5%	2.7%	1.3%
Medicare	3.4%	1.1%	3.1%	1.3%	3.7%	2.2%	6.0%	3.8%	7.3%	6.6%
Commission of the Blind	1.6%	1.4%	1.6%	1.4%	1.4%	1.3%	1.5%	1.3%	1.5%	1.3%
Veteran's Administration	1.4%	0.7%	1.3%	0.7%	1.5%	0.7%	1.4%	0.7%	1.4%	0.7%
Private	20.5%	21.6%	18.9%	20.2%	17.5%	19.2%	17.2%	17.8%	15.0%	17.6%

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the mean bed-day occupancy for all facilities reporting resident days funded by the indicated payment source.
Mean occupancy percentages are calculated by dividing the number of resident days for each payment source per facility by the total number of resident days for all payment sources per facility; including zero values.

Section 2: Expenses, Revenues and Financial Structure (1989 - 1993)

Table 2.1 Median Nursing Facility Total Operating Expense Per Diem (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	522	$85.44	528	$94.58	520	$100.47	527	$105.15	512	$111.67
Health Service Area										
HSA I	73	$78.64	73	$87.30	73	$94.61	74	$99.90	71	$104.35
HSA II	70	$81.41	70	$88.84	66	$96.60	67	$103.82	69	$107.71
HSA III	46	$86.75	47	$99.81	47	$101.71	48	$105.90	46	$112.68
HSA IV	175	$90.09	175	$96.68	174	$104.39	174	$107.81	166	$115.06
HSA V	102	$85.31	106	$91.65	104	$100.07	105	$104.50	103	$110.92
HSA VI	56	$82.05	57	$93.48	56	$98.20	59	$103.60	57	$112.05
Level of Care										
Skilled	53	$104.91	53	$114.98	62	$125.70	79	$134.57	80	$139.39
Intermediate	174	$64.27	166	$71.42	56	$77.98	150	$81.59	133	$85.80
Multi-level	291	$93.92	305	$102.01	98	$107.10	294	$110.60	296	$115.41
Pediatric	4	$157.50	4	$167.19	4	$177.04	4	$184.59	3	$214.43
Profit Status										
For-Profit	433	$81.86	421	$89.88	402	$96.04	424	$101.31	402	$106.71
Non-Profit	89	$97.71	107	$108.12	118	$113.33	103	$119.79	110	$130.40
Management Structure										
Management Co.	243	$91.36	232	$97.53	226	$103.77	239	$106.72	203	$111.59
Independent	279	$76.02	296	$86.34	294	$94.65	288	$103.35	309	$112.05

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 documents with the MRSC; statewide and by category.
Median values are the median per diem expense for this variable; statewide and by category.

Table 2.2 Median Nursing Facility Administrative Expense Per Diem (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	522	$5.43	528	$6.32	520	$7.01	527	$7.32	512	$7.89
Health Service Area										
HSA I	73	$4.93	73	$5.28	73	$5.94	74	$6.31	71	$6.46
HSA II	70	$4.83	70	$5.53	66	$6.34	67	$6.52	69	$6.62
HSA III	46	$6.41	47	$7.04	47	$8.00	48	$8.64	46	$8.88
HSA IV	175	$5.42	175	$6.29	174	$7.00	174	$7.33	166	$7.64
HSA V	102	$5.54	106	$5.99	104	$6.67	105	$7.14	103	$7.60
HSA VI	56	$5.92	57	$7.28	56	$7.74	59	$8.41	57	$8.71
Level of Care										
Skilled	53	$6.18	53	$7.05	62	$8.17	79	$9.27	80	$8.60
Intermediate	174	$4.36	166	$4.85	156	$5.86	150	$6.22	133	$6.58
Multi-level	291	$5.99	305	$6.67	298	$7.13	294	$7.53	296	$8.04
Pediatric	4	$4.92	4	$5.88	4	$6.94	4	$7.80	3	$14.23
Profit Status										
For-Profit	433	$5.42	421	$6.38	402	$7.17	424	$7.53	402	$7.81
Non-Profit	89	$5.49	107	$6.05	118	$6.30	103	$6.99	110	$7.99
Management Structure										
Management Co.	243	$6.36	232	$7.27	226	$8.29	239	$8.51	203	$8.71
Independent	279	$4.70	296	$5.23	294	$5.87	288	$6.20	309	$7.17

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 documents with the MRSC; statewide and by category.
Median values are the median per diem expense for this variable; statewide and by category.

Table 2.3 Median Nursing Facility Director of Nurses Expense Per Diem (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	522	$0.96	528	$1.16	520	$1.55	527	$1.65	512	$1.70
Health Service Area										
HSA I	73	$0.93	73	$1.09	73	$1.36	74	$1.39	71	$1.47
HSA II	70	$0.96	70	$1.14	66	$1.59	67	$1.66	69	$1.78
HSA III	46	$1.02	47	$1.04	47	$1.55	48	$1.64	46	$1.77
HSA IV	175	$0.94	175	$1.12	174	$1.70	174	$1.82	166	$1.82
HSA V	102	$1.01	106	$1.23	104	$1.51	105	$1.60	103	$1.68
HSA VI	56	$0.86	57	$1.18	56	$1.92	59	$1.77	57	$1.81
Level of Care										
Skilled	53	$1.76	53	$1.77	62	$1.96	79	$1.95	80	$1.99
Intermediate	174	$0.00	166	$0.58	156	$2.59	150	$2.90	133	$3.10
Multi-level	291	$1.17	305	$1.27	298	$1.40	294	$1.39	296	$1.48
Pediatric	4	$1.38	4	$1.52	4	$1.58	4	$1.54	3	$2.28
Profit Status										
For-Profit	433	$0.95	421	$1.16	402	$1.59	424	$1.69	402	$1.72
Non-Profit	89	$0.97	107	$1.12	118	$1.46	103	$1.45	110	$1.66
Management Structure										
Management Co.	243	$1.09	232	$1.19	226	$1.46	239	$1.43	203	$1.56
Independent	279	$0.00	296	$1.07	294	$1.87	288	$1.98	309	$1.93

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 documents with the MRSC; statewide and by category.
Median values are the median per diem expense for this variable; statewide and by category.

Table 2.4 Median Nursing Facility Nursing Expense Per Diem (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	522	$38.88	528	$42.20	520	$44.87	527	$46.49	512	$48.35
Health Service Area										
HSA I	73	$33.45	73	$37.98	73	$39.38	74	$41.35	71	$42.00
HSA II	70	$38.59	70	$42.01	66	$45.55	67	$45.50	69	$47.61
HSA III	46	$41.40	47	$44.87	47	$45.60	48	$47.40	46	$49.18
HSA IV	175	$41.00	175	$44.87	174	$46.79	174	$48.06	166	$50.00
HSA V	102	$40.64	106	$43.33	104	$45.69	105	$47.37	103	$49.65
HSA VI	56	$38.17	57	$41.41	56	$43.29	59	$46.27	57	$47.53
Level of Care										
Skilled	53	$50.43	53	$53.43	62	$56.14	79	$57.93	80	$59.03
Intermediate	174	$29.20	166	$31.54	156	$33.12	150	$34.84	133	$36.84
Multi-level	291	$43.41	305	$46.32	298	$47.33	294	$48.70	296	$50.38
Pediatric	4	$68.65	4	$74.25	4	$73.18	4	$79.83	3	$83.64
Profit Status										
For-Profit	433	$37.61	421	$41.09	402	$43.57	424	$45.21	402	$46.36
Non-Profit	89	$46.57	107	$49.64	118	$50.46	103	$54.71	110	$56.56
Management Structure										
Management Co.	243	$41.95	232	$44.32	226	$45.70	239	$46.81	203	$47.76
Independent	279	$34.32	296	$39.22	294	$42.02	288	$44.72	309	$48.54

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 documents with the MRSC; statewide and by category.
Median values are the median per diem expense for this variable; statewide and by category.

Table 2.5 Median Nursing Facility Variable Expense Per Diem (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	522	$28.98	528	$32.15	520	$34.39	527	$37.39	512	$41.10
Health Service Area										
HSA I	73	$27.19	73	$30.76	73	$32.07	74	$36.59	71	$40.91
HSA II	70	$27.85	70	$30.95	66	$34.33	67	$36.35	69	$39.32
HSA III	46	$30.25	47	$32.31	47	$35.38	48	$38.88	46	$41.63
HSA IV	175	$29.96	175	$32.81	174	$34.68	174	$37.47	166	$42.74
HSA V	102	$30.07	106	$33.51	104	$35.20	105	$37.39	103	$40.63
HSA VI	56	$28.59	57	$30.64	56	$34.20	59	$36.29	57	$39.56
Level of Care										
Skilled	53	$36.30	53	$40.21	62	$41.61	79	$47.64	80	$50.91
Intermediate	174	$24.81	166	$26.88	156	$28.56	150	$30.46	133	$32.90
Multi-level	291	$30.88	305	$33.56	298	$35.89	294	$39.07	296	$42.97
Pediatric	4	$50.28	4	$54.35	4	$59.10	4	$59.71	3	$64.43
Profit Status										
For-Profit	433	$27.94	421	$30.76	402	$32.79	424	$36.16	402	$39.56
Non-Profit	89	$36.28	107	$38.82	118	$40.96	103	$43.97	110	$48.59
Management Structure										
Management Co.	243	$29.32	232	$32.09	226	$35.05	239	$37.76	203	$41.47
Independent	279	$28.41	296	$32.15	294	$33.81	288	$36.56	309	$40.63

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 documents with the MRSC; statewide and by category.
Median values are the median per diem expense for this variable; statewide and by category.

Table 2.6 Median Nursing Facility Fixed Expense Per Diem (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	522	$6.08	528	$7.08	520	$7.13	527	$7.23	512	$7.15
Health Service Area										
HSA I	73	$7.82	73	$8.58	73	$8.71	74	$8.48	71	$8.62
HSAII	70	$5.95	70	$6.16	66	$6.43	67	$6.34	69	$7.14
HSA III	46	$7.43	47	$9.39	47	$8.05	48	$8.46	46	$8.13
HSA IV	175	$5.98	175	$7.19	174	$6.93	174	$7.32	166	$7.50
HSA V	102	$5.39	106	$6.07	104	$6.51	105	$6.28	103	$6.50
HSA VI	56	$5.80	57	$6.59	56	$7.46	59	$7.63	57	$6.84
Level of Care										
Skilled	53	$9.39	53	$9.69	62	$10.98	79	$12.33	80	$13.48
Intermediate	174	$3.84	166	$4.04	156	$4.07	150	$3.92	133	$4.30
Multi-level	291	$7.69	305	$9.33	298	$9.15	294	$8.66	296	$8.84
Pediatric	4	$5.72	4	$5.87	4	$6.69	4	$5.30	3	$7.26
Profit Status										
For-Profit	433	$6.25	421	$7.08	402	$6.99	424	$7.15	402	$6.64
Non-Profit	89	$5.67	107	$6.90	118	$8.85	103	$7.42	110	$10.34
Management Structure										
Management Co.	243	$8.46	232	$9.39	226	$8.77	239	$8.30	203	$7.10
Independent	279	$5.00	296	$5.86	294	$6.14	288	$6.22	309	$7.21

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 documents with the MRSC; statewide and by category.
Median values are the median per diem expense for this variable; statewide and by category.

Table 2.7 Median Nursing Facility Other Operating Expense Per Diem (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	522	$0.66	528	$0.89	520	$0.98	527	$0.91	512	$1.00
Health Service Area										
HSA I	73	$0.51	73	$0.82	73	$0.79	74	$1.08	71	$1.33
HSA II	70	$0.83	70	$0.79	66	$1.03	67	$1.20	69	$1.14
HSA III	46	$0.76	47	$0.82	47	$0.96	48	$0.82	46	$1.21
HSA IV	175	$0.75	175	$0.94	174	$1.07	174	$0.84	166	$0.97
HSA V	102	$0.70	106	$0.91	104	$0.88	105	$0.93		$0.79
HSA VI	56	$0.49	57	$0.82	56	$0.72	59	$0.72	57	$0.80
Level of Care										
Skilled	53	$1.20	53	$1.44	62	$1.44	79	$1.33	80	$1.67
Intermediate	174	$0.65	166	$0.83	56	$0.94	150	$0.54	133	$0.67
Multi-level	291	$0.61	305	$0.86	98	$0.88	294	$1.07	296	$1.08
Pediatric	4	$14.96	4	$15.71	4	$20.26	4	$19.57	3	$30.26
Profit Status										
For-Profit	433	$0.66	421	$0.87	402	$0.95	424	$0.82	402	$0.96
Non-Profit	89	$0.72	107	$1.31	118	$1.07	103	$1.44	110	$1.62
Management Structure										
Management Co.	243	$0.58	232	$0.78	226	$0.83	239	$0.75	203	$0.86
Independent	279	$0.76	296	$1.03	294	$1.06	288	$1.02	309	$1.09

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 documents with the MRSC; statewide and by category.
Median values are the median per diem expense for this variable; statewide and by category.

Table 2.8 Nursing Facilities Reporting Nursing Pool Expenses (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Statewide										
All	522		528		520		527		512	
Report Pool-use	414	79.3%	381	72.2%	311	59.8%	287	54.5%	279	54.5%

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing RSC-1 documents with the MRSC; statewide and for those reporting nursing pool expenses.
% values represent the proportion of facilities which reported nursing pool expenses.

Table 2.9 Median Nursing Facility Employer's Health Insurance Expense Per $100 of Employee Gross Wages (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	493	$4.12	490	$4.68	486	$4.85	492	$5.11	477	$5.20
Health Service Area										
HSA I	71	$4.83	70	$5.75	71	$6.39	67	$6.09	69	$6.13
HSA II	68	$3.77	66	$4.21	61	$6.45	65	$4.75	68	$5.14
HSA III	41	$4.96	45	$5.74	44	$5.24	44	$4.98	43	$5.39
HSA IV	162	$3.87	161	$4.18	162	$4.28	161	$4.70	151	$4.95
HSA V	99	$4.29	96	$5.02	96	$5.52	99	$5.49	93	$5.82
HSA VI	52	$3.70	52	$3.91	52	$4.49	56	$4.36	53	$4.11
Level of Care										
Skilled	50	$3.82	49	$5.27	58	$5.59	76	$5.12	72	$5.24
Intermediate	157	$3.30	146	$3.77	139	$3.59	133	$3.72	118	$3.87
Multi-level	283	$4.25	291	$4.89	285	$5.07	280	$5.49	284	$5.62
Pediatric	3	$5.07	4	$6.36	4	$6.96	3	$7.41	3	$6.53
Profit Status										
For-Profit	406	$3.96	386	$4.46	373	$4.69	394	$4.67	368	$4.84
Non-Profit	87	$5.29	104	$5.52	113	$5.57	98	$6.28	109	$6.33
Management Structure										
Management Co.	234	$3.78	218	$4.50	210	$4.84	217	$4.80	193	$4.86
Independent	259	$4.41	272	$4.74	276	$4.88	275	$5.24	284	$5.61

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent facilities reporting expenses in this area to the MRSC; statewide and by category; zero values were excluded.
Median values represent the median employer spending per $100 of gross employee wages; statewide and by category.

Table 2.10 Median Nursing Facility Employer's Worker's Compensation Expense Per $100 of Employee Gross Wages (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	493	$4.39	486	$4.76	488	$5.82	494	$5.68	477	$5.76
Health Service Area										
HSA I	71	$4.04	69	$4.75	72	$6.24	68	$6.44	69	$5.73
HSA II	68	$4.81	66	$4.79	61	$6.02	65	$5.54	68	$5.71
HSA III	41	$4.51	45	$4.90	44	$5.69	44	$5.08	43	$5.51
HSA IV	162	$4.18	158	$4.68	162	$5.44	161	$5.48	151	$5.52
HSA V	99	$4.85	95	$4.90	97	$6.62	100	$6.32	93	$6.24
HSA VI	52	$4.05	53	$4.77	52	$5.34	56	$5.58	53	$5.99
Level of Care										
Skilled	50	$3.96	48	$4.62	58	$5.60	76	$5.67	72	$5.72
Intermediate	158	$4.14	146	$4.74	141	$5.40	135	$5.47	118	$5.89
Multi-level	282	$4.70	288	$4.79	285	$6.39	280	$6.03	284	$5.74
Pediatric	3	$3.69	4	$4.80	4	$6.19	3	$5.59	3	$5.77
Profit Status										
For-Profit	407	$4.38	384	$4.75	375	$5.81	396	$5.66	368	$5.78
Non-Profit	86	$4.48	102	$4.86	113	$5.97	98	$5.88	109	$5.73
Management Structure										
Management Co.	234	$4.87	214	$4.85	210	$6.35	218	$6.20	193	$5.82
Independent	259	$4.05	272	$4.65	278	$5.42	276	$5.46	284	$5.74

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent facilities reporting expenses in this area to the MRSC; statewide and by category; zero values were excluded.
Median values represent the median employer spending per $100 of gross employee wages; statewide and by category.

Table 2.11 Median Nursing Facility Employer's Pension Plan Expense Per $100 of Employee Gross Wages (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	118	$1.49	133	$1.67	141	$1.37	173	$0.96	166	$1.03
Health Service Area										
HSA I	26	$0.78	28	$0.59	30	$0.67	34	$0.79	32	$0.82
HSA 11	$3.07	13	$1.98	16	$1.14	18	$0.78	19	$0.86	
HSA III	6	$1.96	8	$1.61	9	$1.06	10	$0.95	10	$0.91
HSA IV	44	$1.57	49	$1.72	45	$1.84	59	$1.20	50	$1.52
HSA V	21	$1.84	26	$1.76	28	$1.53	33	$0.98	36	$1.11
HSA VI	10	$2.78	9	$1.67	13	$3.14	19	$0.33	19	$1.03
Level of Care										
Skilled	18	$1.22	20	$0.95	23	$2.96	36	$0.91	35	$1.53
Intermediate	21	$1.49	17	$1.49	18	$3.63	23	$1.22	20	$1.38
Multi-level	78	$1.49	95	$1.85	99	$1.15	113	$0.93	111	$0.88
Pediatric	1	$1.80	1	$3.92	1	$4.17	1	$4.30	0	$0.00
Profit Status										
For-Profit	74	$0.84	75	$1.46	80	$1.04	114	$0.59	106	$0.73
Non-Profit	44	$3.16	58	$2.17	61	$2.74	59	$2.89	60	$2.77
Management Structure										
Management Co.	57	$0.76	55	$1.27	56	$0.79	82	$0.38	66	$0.70
Independent	61	$2.61	78	$1.88	85	$2.23	91	$2.13	100	$1.85

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the facilities reporting expenses in this area to the MRSC; statewide and by category; zero values were excluded.
Median values represent the median employer spending per $100 of gross employee wages; statewide and by category.

Table 2.12 Median Nursing Facility Total Revenue Per Diem (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	522	$88.49	528	$99.24	520	$103.75	526	$108.44	512	$115.15
Health Service Area										
HSA I	73	$79.13	73	$89.70	73	$93.57	74	$97.23	71	$103.29
HSA II	70	$86.63	70	$94.58	66	$100.72	67	$106.81	69	$112.58
HSA III	46	$88.79	47	$100.59	47	$106.29	48	$112.89	46	$119.19
HSA IV	175	$95.40	175	$104.22	174	$107.61	173	$112.09	166	$119.52
HSA V	102	$87.61	106	$96.48	104	$102.37	105	$108.34	103	$112.16
HSA VI	56	$89.02	57	$100.11	56	$106.10	59	$113.78	57	$118.67
Level of Care										
Skilled	53	$107.19	53	$116.76	62	$124.96	78	$131.96	80	$138.07
Intermediate	174	$65.68	166	$74.38	156	$77.67	150	$82.50	133	$87.99
Multi-level	291	$96.78	305	$106.27	298	$110.81	294	$114.81	296	$120.24
Pediatric	4	$164.57	4	$173.06	4	$194.97	4	$185.69	3	$224.69
Profit Status										
For-Profit	433	$85.15	421	$94.68	402	$99.57	423	$105.82	402	$110.35
Non-Profit	89	$99.81	107	$111.72	118	$114.85	103	$121.15	110	$127.49
Management Structure										
Management Co.	243	$94.09	232	$101.95	226	$108.94	239	$112.48	203	$116.54
Independent	279	$78.88	296	$93.44	294	$97.04	287	$102.42	309	$112.58

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 documents with the MRSC; statewide and by category.
Median values are the median per diem revenue; statewide and by category.

Table 2.13 Median Nursing Facility Medicare Revenue Per Diem (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	175	$97.44	312	$94.12	332	$116.85	365	$131.79	386	$147.27
Health Service Area										
HSA I	37	$87.61	50	$89.11	54	$111.61	58	$115.34	62	$111.18
HSA II	28	$95.75	44	$91.54	49	$101.48	54	$123.12	56	$145.61
HSA III	12	$89.83	28	$104.29	30	$120.88	35	$132.53	35	$160.00
HSA IV	45	$98.25	94	$92.68	100	$124.64	111	$142.96	122	$149.87
HSA V	35	$100.83	67	$100.83	69	$120.83	72	$127.05	76	$151.16
HSA VI	18	$96.79	29	$97.74	30	$117.03	35	$145.00	35	$162.52
Level of Care										
Skilled	33	$99.65	47	$93.33	60	$121.73	77	$142.70	79	$152.73
Intermediate	0	$0.00	0	$0.00	0	$0.00	6	$109.07	20	$102.74
Multi-level	141	$96.04	264	$94.37	270	$115.08	280	$129.26	286	$147.80
Pediatric	1	$157.14	1	$186.55	2	$125.43	2	$100.57	1	$240.58
Profit Status										
For Profit	149	$96.04	237	$94.24	244	$118.10	282	$132.66	294	$148.34
Non-Profit	26	$105.75	75	$93.35	88	$112.39	83	$127.38	92	$143.65
Management Structure										
Management Co.	130	$98.60	177	$104.83	182	$120.92	196	$140.26	174	$160.80
Independent	45	$92.00	135	$87.00	150	$106.50	169	$123.59	212	$139.73

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 documents with the MRSC; statewide and by category.
Median values are the median per diem revenue from Medicare-funded residents; statewide and by category.

Table 2.14 Median Nursing Facility Private Revenue Per Diem (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	513	$101.29	515	$113.67	505	$124.46	515	$132.38	500	$140.38
Health Service Area										
HSA I	73	$94.13	73	$105.45	73	$112.41	74	$122.31	71	$133.03
HSA II	68	$98.81	68	$109.70	65	$121.71	66	$131.25	66	$136.56
HSA III	45	$104.33	47	$117.72	46	$126.08	48	$135.04	46	$141.84
HSA IV	173	$106.18	168	$119.42	170	$128.08	168	$136.60	163	$145.00
HSA V	101	$101.00	105	$113.02	99	$124.61	102	$133.26	101	$138.51
HSA VI	53	$104.72	54	$114.68	52	$124.95	57	$132.07	53	$140.31
Level of Care										
Skilled	53	$119.28	53	$129.69	62	$139.82	78	$146.09	77	$154.91
Intermediate	165	$79.91	154	$89.44	142	$97.13	139	$102.07	124	$114.66
Multi-level	291	$108.73	304	$121.14	297	$129.72	294	$136.61	296	$144.20
Pediatric	4	$161.07	4	$201.90	4	$253.38	4	$278.92	3	$400.00
Profit Status										
For-Profit	425	$99.24	410	$111.56	388	$120.92	413	$129.85	392	$138.28
Non-Profit	88	$106.59	105	$119.95	117	$131.50	102	$141.22	108	$147.41
Management Structure										
Management Co.	243	$107.12	230	$118.84	224	$127.30	239	$134.92	202	$142.35
Independent	270	$91.80	285	$107.25	281	$117.07	276	$128.93	298	$135.30

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 documents with the MRSC; statewide and by category.
Median values are the median per diem revenue for privately-funded residents; statewide and by category.

Table 2.15 Median Nursing Facility Medicaid Revenue Per Diem (1989 - 1993)

	1989		1990		1991		1992		1993	
	(n)	median	(n)	median	(n)	median	(n)	median	(n)	median
Statewide	520	$76.56	525	$87.99	512	$91.94	521	$96.68	506	$97.50
HealthService Area										
HSA I	73	$73.36	73	$81.04	72	$83.67	74	$89.90	71	$87.99
HSA II	70	$75.02	69	$82.05	66	$91.57	66	$94.63	69	$93.63
HSA III	46	$79.10	46	$90.26	46	$95.45	47	$102.48	45	$100.08
HSA IV	174	$79.58	175	$93.88	173	$94.90	172	$96.67	163	$100.16
HSA V	101	$76.76	106	$86.57	101	$91.79	104	$94.66	103	$99.23
HSA VI	56	$71.70	56	$85.79	54	$90.39	58	$98.53	55	$98.35
Level of Care										
Skilled	52	$96.03	53	$110.44	61	$111.28	76	$112.98	77	$109.49
Intermediate	173	$58.68	165	$67.65	151	$73.71	148	$78.45	131	$82.02
Multi-level	291	$84.86	303	$95.22	296	$98.51	293	$100.40	[illegible]	$100.76
Pediatric	4	$141.44	4	$123.03	4	$135.90	4	$138.66	3	$179.87
Profit Status										
For-Profit	432	$73.40	419	$83.44	395	$89.52	419	$93.31	399	$93.96
Non-Profit	88	$91.23	106	$103.60	117	$104.67	102	$105.97	107	$108.22
Management Structure										
Management Co.	243	$81.91	232	$91.43	225	$94.77	237	$98.29	203	$98.64
Independent	277	$67.55	293	$80.77	287	$89.67	284	$91.32	303	$96.93

Source: Annual RSC-1 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 documents with the MRSC; statewide and by category.
Median values are the median per diem revenue for Medicaid-funded residents; statewide and by category.

Table 2.16 Median Nursing Facility Quick Ratio Values (1989 - 1993)

	1989 (n) = 515		1990 (n) = 521		1991 (n) = 512		1992 (n) = 519		1993 (n) = 505	
	(%)	ratio	(%)	ratio	(%)	ratio	(%)	ratio	(%)	ratio
Statewide	100%	0.698	100%	0.775	100%	0.797	100%	0.789	100%	0.816
Health Service Area										
HSA I	13.6%	1.038	13.6%	0.909	13.7%	1.093	13.7%	0.973	13.3%	0.949
HSA II	13.6%	0.836	13.4%	0.832	12.9%	1.128	12.9%	0.869	13.9%	0.942
HSA III	8.7%	0.740	8.8%	0.749	9.0%	0.889	9.1%	0.966	8.9%	0.902
HSA IV	34.0%	0.581	33.6%	0.795	34.0%	0.674	33.5%	0.660	32.9%	0.749
HSA V	19.8%	0.774	20.0%	0.686	20.0%	0.764	20.0%	0.716	20.4%	0.692
HSA VI	10.3%	.0576	10.6%	0.685	10.4%	0.889	10.8%	1.261	10.7%	1.138
Level of Care										
Skilled	10.5%	0.652	10.2%	0.760	11.9%	0.696	15.0%	0.682	16.0%	0.643
Intermediate	33.0%	0.652	31.5%	0.827	29.9%	0.777	28.3%	0.723	25.7%	0.755
Multi-level	55.7%	0.729	57.5%	0.776	57.4%	0.833	55.9%	0.857	57.6%	0.885
Pediatric	0.8%	1.281	0.8%	1.009	0.8%	1.587	0.8%	1.948	0.6%	3.158
Profit Status										
For-Profit	83.7%	0.668	80.2%	0.735	77.9%	0.732	81.1%	0.705	79.0%	0.770
Non-Profit	16.3%	1.330	19.8%	1.193	22.1%	1.356	18.9%	1.466	21.0%	1.041
Management Structure										
Management Co.	46.6%	0.663	44.1%	0.653	43.6%	0.688	45.5%	0.632	39.6%	0.735
Independent	53.4%	0.744	55.9%	0.940	56.4%	0.967	54.5%	0.889	60.4%	0.908

Source: Annual RSC-1 and RSC-2 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 and RSC-2 documents with the MRSC, statewide.
% values represent the proportion of facilities in each category. Ratio values are the median ratio value for this variable; statewide and by category.

Table 2.17 Median Nursing Facility Current Ratio Values (1989 - 1993)

	1989 (n) = 515		1990 (n) = 521		1991 (n) = 512		1992 (n) = 519		1993 (n) = 505	
	(%)	ratio	(%)	ratio	(%)	ratio	(%)	ratio	(%)	ratio
Statewide	100%	1.012	100%	1.030	100%	1.173	100%	1.153	100%	1.210
Health Service Area										
HSA I	13.6%	1.405	13.6%	1.314	13.7%	1.400	13.7%	1.252	13.3%	1.221
HSA II	13.6%	0.983	13.4%	1.022	12.9%	1.489	12.9%	1.265	13.9%	1.390
HSA III	8.7%	1.055	8.8%	1.097	9.0%	1.553	9.1%	1.533	8.9%	1.364
HSA IV	34.0%	0.861	33.6%	0.976	34.0%	0.970	33.5%	0.933	32.9%	1.016
HSA V	19.8%	0.983	20.0%	0.974	20.0%	1.036	20.0%	1.097	20.4%	1.088
HSA VI	10.3%	1.377	10.6%	1.122	10.4%	1.572	10.8%	1.861	10.7%	1.682
Level of Care										
Skilled	10.5%	0.752	10.2%	0.996	11.9%	1.159	15.0%	1.084	16.0%	0.984
Intermediate	33.0%	1.030	31.5%	1.067	29.9%	1.140	28.3%	1.072	25.7%	1.042
Multi-level	55.7%	1.015	57.5%	1.016	57.4%	1.210	55.9%	1.228	57.6%	1.310
Pediatric	0.8%	1.359	0.8%	1.153	0.8%	1.724	0.8%	2.180	0.6%	4.378
Profit Status										
For-Profit	83.7%	0.965	80.2%	0.997	77.9%	1.064	81.1%	1.083	79.0%	1.165
Non-Profit	16.3%	1.478	19.8%	1.568	22.1%	1.542	18.9%	1.721	21.0%	1.580
Management Structure										
Management Co.	46.6%	0.889	44.1%	0.852	43.6%	1.003	45.5%	0.924	39.6%	1.094
Independent	53.4%	1.137	55.9%	1.221	56.4%	1.318	54.5%	1.337	60.4%	1.259

Source: Annual RSC-1 and RSC-2 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 and RSC-2 documents with the MRSC, statewide.
% values represent the proportion of facilities in each category. Ratio values are the median ratio value for this variable; statewide and by category.

Table 2.18 Median Nursing Facility (Long-Term) Debt/Asset Ratio Values (1989 - 1993)

	1989 (n) = 515		1990 (n) = 521		1991 (n) = 512		1992 (n) = 519		1993 (n) = 505	
	(%)	ratio	(%)	ratio	(%)	ratio	(%)	ratio	(%)	ratio
Statewide	100%	0.379	100%	0.371	100%	0.371	100%	0.365	100%	0.253
Health Service Area										
HSA I	13.6%	0.608	13.6%	0.629	13.7%	0.640	13.7%	0.546	13.3%	0.410
HSA II	13.6%	0.345	13.4%	0.359	12.9%	0.395	12.9%	0.446	13.9%	0.165
HSA III	8.7%	0.353	8.8%	0.424	9.0%	0.363	9.1%	0.195	8.9%	0.158
HSA IV	34.0%	0.409	33.6%	0.330	34.0%	0.331	33.5%	0.306	32.9%	0.287
HSA V	19.8%	0.306	20.0%	0.367	20.0%	0.328	20.0%	0.343	20.4%	0.213
HSA VI	10.3%	0.337	10.6%	0.371	10.4%	0.357	10.8%	0.409	10.7%	0.280
Level of Care										
Skilled	10.5%	0.425	10.2%	0.524	11.9%	0.506	15.0%	0.498	16.0%	0.409
Intermediate	33.0%	0.244	31.5%	0.236	29.9%	0.182	28.3%	0.146	25.7%	0.132
Multi-level	55.7%	0.433	57.5%	0.489	57.4%	0.527	55.9%	0.461	57.6%	0.348
Pediatric	0.8%	0.241	0.8%	0.216	0.8%	0.205	0.8%	0.201	0.6%	0.269
Profit Status										
For-Profit	83.7%	0.403	80.2%	0.364	77.9%	0.375	81.1%	0.375	79.0%	0.218
Non-Profit	16.3%	0.239	19.8%	0.403	22.1%	0.369	18.9%	0.336	21.0%	0.387
Management Structure										
Management Co.	46.6%	0.395	44.1%	0.486	43.6%	0.514	45.5%	0.441	39.6%	0.123
Independent	53.4%	0.365	55.9%	0.339	56.4%	0.322	54.5%	0.313	60.4%	0.306

Source: Annual RSC-1 and RSC-2 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 and RSC-2 documents with the MRSC, statewide.
% values represent the proportion of facilities in each category. Ratio values are the median ratio value for this variable; statewide and by category.

Table 2.19 Median Nursing Facility Debt/Asset Ratio Values (1989 - 1993)

	1989 (n) = 515		1990 (n) = 521		1991 (n) = 512		1992 (n) = 519		1993 (n) = 505	
	(%)	ratio	(%)	ratio	(%)	ratio	(%)	ratio	(%)	ratio
Statewide	100%	0.857	100%	0.862	100%	0.803	100%	0.815	100%	0.790
Health Service Area										
HSA I	13.6%	0.910	13.6%	0.908	13.7%	0.929	13.7%	0.943	13.3%	0.914
HSA II	13.6%	0.819	13.4%	0.877	12.9%	0.700	12.9%	0.784	13.9%	0.805
HSA III	8.7%	0.798	8.8%	0.828	9.0%	0.798	9.1%	0.714	8.9%	0.603
HSA IV	34.0%	0.912	33.6%	0.860	34.0%	0.820	33.5%	0.823	32.9%	0.828
HSA V	19.8%	0.787	20.0%	0.874	20.0%	0.767	20.0%	0.758	20.4%	0.721
HSA VI	10.3%	0.788	10.6%	0.766	10.4%	0.741	10.8%	0.789	10.7%	0.602
Level of Care										
Skilled	10.5%	0.921	10.2%	0.862	11.9%	0.901	15.0%	0.948	16.0%	0.914
Intermediate	33.0%	0.807	31.5%	0.832	29.9%	0.782	28.3%	0.793	25.7%	0.766
Multi-level	55.7%	0.873	57.5%	0.879	57.4%	0.797	55.9%	0.777	57.6%	0.760
Pediatric	0.8%	0.732	0.8%	0.702	0.8%	0.611	0.8%	0.607	0.6%	0.396
Profit Status										
For-Profit	83.7%	0.862	80.2%	0.864	77.9%	0.799	81.1%	0.819	79.0%	0.775
Non-Profit	16.3%	0.717	19.8%	0.856	22.1%	0.813	18.9%	0.789	21.0%	0.862
Management Structure										
Management Co.	46.6%	0.886	44.1%	0.901	43.6%	0.830	45.5%	0.861	39.6%	0.748
Independent	53.4%	0.818	55.9%	0.812	56.4%	0.775	54.5%	0.793	60.4%	0.822

Source: Annual RSC-1 and RSC-2 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 and RSC-2 documents with the MRSC, statewide.
% values represent the proportion of facilities in each category. Ratio values are the median ratio value for this variable; statewide and by category.

Table 2.20 Median Nursing Facility Return on Assets Ratio Values (1989 - 1993)

	1989 (n) = 515		1990 (n) = 521		1991 (n) = 512		1992 (n) = 519		1993 (n) = 505	
	(%)	ratio	(%)	ratio	(%)	ratio	(%)	ratio	(%)	ratio
Statewide	100%	0.010	100%	0.038	100%	0.021	100%	0.011	100%	0.022
Health Service Area										
HSA I	13.6%	0.018	13.6%	0.033	13.7%	0.030	13.7%	0.011	13.3%	0.022
HSA II	13.6%	0.014	13.4%	0.047	12.9%	0.062	12.9%	0.015	13.9%	0.019
HSA III	8.7%	0.013	8.8%	0.027	9.0%	0.056	9.1%	0.027	8.9%	0.045
HSA IV	34.0%	0.005	33.6%	0.063	34.0%	0.009	33.5%	0.002	32.9%	0.007
HSA V	19.8%	0.008	20.0%	0.025	20.0%	0.009	20.0%	0.004	20.4%	0.021
HSA VI	10.3%	0.029	10.6%	0.051	10.4%	0.056	10.8%	0.024	10.7%	0.029
Level of Care										
Skilled	10.5%	-0.006	10.2%	0.035	11.9%	-0.010	15.0%	-0.013	16.0%	-0.003
Intermediate	33.0%	0.013	31.5%	0.032	29.9%	0.029	28.3%	0.004	25.7%	0.037
Multi-level	55.7%	0.013	57.5%	0.041	57.4%	0.027	55.9%	0.019	57.6%	0.024
Pediatric	0.8%	0.022	0.8%	0.094	0.8%	0.167	0.8%	-0.003	0.6%	0.035
Profit Status										
For-Profit	83.7%	0.012	80.2%	0.045	77.9%	0.030	81.1%	0.018	79.0%	0.031
Non-Profit	16.3%	0.002	19.8%	0.024	22.1%	0.001	18.9%	-0.001	21.0%	-0.002
Management Structure										
Management Co.	46.6%	0.009	44.1%	0.033	43.6%	0.038	45.5%	0.016	39.6%	0.037
Independent	53.4%	0.013	55.9%	0.047	56.4%	0.012	54.5%	0.010	60.4%	0.013

Source: Annual RSC-1 and RSC-2 Cost Report filings to the Massachusetts Rate Setting Commission (MRSC).
Notes: n values represent the number of facilities filing accurate RSC-1 and RSC-2 documents with the MRSC, statewide.
% values represent the proportion of facilities in each category. Ratio values are the median ratio value for this variable; statewide and by category.

Section 3: Resident Demographics and Clincial Characteristics (1991 - 1993)

Table 3.1 Proportion of Medicaid-Funded Nursing Facility Residents by Demographic Indicators (1991 - 1993)

Demographic Indicators	1991 (n) = 37,762 (%)	1992 (n) = 37,987 (%)	1993 (n) = 34,912 (%)
Gender			
Male	21.7%	21.3%	21.0%
Female	78.3%	78.7%	79.0%
Race			
White	97.1%	96.8%	96.5%
Non-White	2.9%	3.2%	3.5%
Level of Care			
Skilled	10.0%	12.6%	12.3%
Intermediate	18.6%	17.5%	16.0%
Multi-level	71.4%	69.9%	71.7%
Age			
< 65	5.0%	5.0%	4.9%
65 - 74	11.6%	11.2%	10.9%
75 - 84	31.3%	30.7%	30.6%
85 +	52.1%	53.1%	53.6%

Source: Quarter 4 Management Minute Questionnaire (MMQ) data filed by facilities with the Division of Medical Assistance.

Notes: n values represent the number of Medicaid-funded nursing facility residents, with reliable data for the period, statewide. % values represent the proportion of the Medicaid-funded residents in each category.

Table 3.2 Proportion of Medicaid-Funded Nursing Facility Residents by Health and Behavior Indicators (1991 - 1993)

Health and Behavior Indicators	1991 (n) = 37,762 (%)	1992 (n) = 37,987 (%)	1993 (n) = 34,912 (%)
Immobility	31.7%	35.0%	37.0%
Spasticity/Rigidity	8.5%	8.8%	7.2%
Behavioral Problems	20.4%	20.1%	18.0%
Isolation	0.3%	0.4%	0.3%
Disorientated	62.1%	64.1%	65.0%
Restraint Use			
Ordered-Not Used Daily	10.7%	8.1%	6.0%
Ordered-Used Daily	17.9%	17.6%	22.1%
Activity Level			
Active	23.2%	21.8%	21.3%
Occasionally Active	41.3%	44.1%	45.9%
Rarely Active	32.8%	31.4%	30.3%

Source: Quarter 4 Management Minute Questionnaire (MMQ) data filed by facilities with the Division of Medical Assistance.

Notes: n values represent the number of Medicaid-funded nursing facility residents, with reliable data for the period, statewide. % values represent the proportion of the Medicaid-funded residents in each category. Percentages do not sum to 100 due to conditions/levels not reported in this table. Characteristics and Activity Levels are defined in Appendix 4.

Table 3.3 Proportion of Medicaid-Funded Nursing Facility Residents by Dependency Level for Certain Activities of Daily Living (ADLs) (1991 - 1993)

Activities of Daily Living		1991 (n) = 37,762 (%)	1992 (n) = 37,987 (%)	1993 (n) = 34,912 (%)
Bathing:	Independent	8.9%	7.8%	7.6%
	Assist	35.6%	35.2%	34.1%
	Totally Dependent	55.5%	57.0%	58.3%
Dressing:	Independent	12.0%	10.3%	9.7%
	Assist	32.3%	32.9%	32.7%
	Totally Dependent	54.0%	55.4%	56.3%
Eating:	Independent	54.5%	50.8%	49.9%
	Assist	26.5%	29.4%	29.4%
	Totally Dependent	16.6%	17.3%	17.9%
	Tube Fed and/or I.V.	2.2%	2.4%	2.7%
Toilet Use:	Independent	30.4%	27.5%	26.1%
	Assist	31.2%	32.8%	33.8%
	Totally dependent	25.6%	26.8%	27.2%
Incontinence:				
	with bladder	59.2%	61.9%	62.9%
	with bowel	54.2%	56.1%	56.4%

Source: Quarter 4 Management Minute Questionnaire (MMQ) data filed by facilities with the Division of Medical Assistance.

Notes: n values represent the number of Medicaid-funded residents, with reliable data for the period, statewide. % values represent the proportion of the Medicaid-funded nursing facility residents by category, within each ADL item. Percentages may not sum to 100 due to conditions/levels not reported in this table. Activities of Daily Living are defined in Appendix 4.

Table 3.4 Proportion of Medicaid-Funded Nursing Facility Residents by Number of ADL Dependencies (1991 - 1993)

Number of ADL Dependencies	1991 (n) = 37,762 (%)	1992 (n) = 37,987 (%)	1993 (n) = 34,912 (%)
0	6.7%	5.6%	5.3%
1	4.6%	3.9%	3.5%
2	10.1%	8.8%	8.0%
3	7.0%	6.8%	6.8%
4	8.0%	7.9%	8.1%
5	14.8%	14.2%	13.5%
6	25.7%	26.3%	27.1%
7	23.1%	26.5%	27.7%

Source: Quarter 4 Management Minute Questionnaire (MMQ) data filed by facilities with the Division of Medical Assistance.

Notes: n values represent the number of Medicaid-funded residents, with reliable data for the period, statewide. % values represent the proportion of the Medicaid-funded nursing facilities residents, having that number of ADL dependencies. The following MMQ codes are regarded as "dependent" for each of the ADLs: Bathing (2,3), Dressing (2,3), Mobility (3,4) Eating (2,3,4,5,6,7,8,), Continent (3,4,5,6), Toilet Use (2,3) and Transfer (2,3).

Table 3.5 Mean MMQ Score for Medicaid-Funded Nursing Facility Residents by Demographic Indicators (1991 - 1993)

Demographic Indicators	1991 (n) = 37,762		1992 (n) = 37,987		1993 (n) = 34,912	
	Mean Minutes	Standard Deviation	Mean Minutes	Standard Deviation	Mean Minutes	Standard Deviation
Industry	180.1	(84.9)	188.6	(84.2)	191.1	(83.4)
Gender						
Male	173.5	(86.0)	182.6	(86.3)	185.7	(85.0)
Female	181.9	(84.5)	190.2	(83.5)	192.5	(82.9)
Race						
White	179.9	(84.8)	188.4	(84.1)	190.7	(83.4)
Non-White	183.4	(87.0)	195.6	(87.5)	200.3	(84.9)
Level of Care						
Skilled	205.1	(79.6)	206.6	(81.9)	206.6	(83.3)
Intermediate	150.2	(78.0)	164.0	(79.7)	171.6	(80.4)
Multi-level	184.3	(85.3)	191.5	(84.4)	192.8	(83.3)
Age						
< 65	165.8	(92.0)	178.0	(91.8)	184.4	(90.5)
65 - 74	169.6	(86.7)	178.4	(86.7)	180.8	(87.0)
75 - 84	177.9	(84.8)	187.2	(84.4)	190.0	(83.6)
85 +	185.1	(83.3)	192.5	(82.5)	194.4	(81.7)

Source: Quarter 4 Management Minute Questionnaire (MMQ) data filed for each year by facilities, with the Division of Medical Assistance.
Notes: n values represent the number of Medicaid-funded nursing facility residents with reliable data for the period, statewide.
Mean minutes values are the mean MMQ scores for Medicaid-funded residents in that category.
Standard deviation values are the measure of dispersion of the MMQ scores. An explanation of these measures is provided in Appendix 3.

Table 3.6 Ten Most Frequent Primary Diagnosis of Medicaid-Funded Nursing Facility Residents (1991 - 1993)

1991 (n) = 37,762		1992 (n) = 37,987		1993 (n) = 34,912	
Diagnosis	**Freq. %**	**Diagnosis**	**Freq. %**	**Diagnosis**	**Freq. %**
Alzheimer's disease	18.9%	Alzheimer's disease	19.4%	Alzheimer's disease	19.6%
Cerebrovascular disease	8.9%	Cerebrovascular disease	8.6%	Cerebrovascular disease	8.4%
Diabetes	5.4%	Diabetes	5.5%	Diabetes	5.4%
Schizophrenic disorders	3.8%	Congestive heart failure	3.7%	Congestive heart failure	3.6%
Congestive heart failure	3.7%	Schizophrenic disorders	3.6%	Hypertension	3.6%
Hypertension	3.7%	Hypertension	3.6%	Hip fracture	3.6%
Ischemic heart disease	3.0%	Hip fracture	3.3%	Schizophrenic disorders	3.4%
Hip fracture	2.9%	Ischemic heart disease	2.6%	Mentally ill	2.6%
Parkinson's disease	2.5%	Parkinson's disease	2.5%	Ischemic heart disease	2.4%
Chronic airway obstruction	2.3%	Mentally ill	2.5%	Parkinson's disease	2.4%

Source: Quarter 4 Management Minute Questionnaire data filed by facilities for each year with the Division of Medical Assistance.

Notes: n values represent the number of Medicaid-funded nursing facility residents with reliable data for the period, statewide.
% values represent the frequency that a given diagnosis was the primary diagnosis for Medicaid-funded residents.

ICD-9 Codes:

Alzheimer	290,331	Hypertension	401
Cerebrovascular disease	436,437,438	Ischemic heart disease	414
Chronic airway obstruction	436	Mentally ill	298
Congestive heart failure	428	Parkinson's disease	332
Diabetes	250	Schizophrenic disorders	295
Hip Fracture	820		

Table 3.7 Proportion of Medicaid-Funded Nursing Facility Residents with a Primary Diagnosis of Alzheimer's Disease by Demographic Indicators (1991 - 1993)

Demographic Indicators	1991 (n) = 7,133 (%)	1992 (n) = 7,352 (%)	1993 (n) = 6,845 (%)
Gender			
Male	18.0%	17.5%	17.2%
Female	82.0%	82.5%	82.8%
Race			
White	97.0%	96.8%	96.7%
Non-White	3.0%	3.2%	3.3%
Level of Facility			
Skilled	8.1%	10.7%	10.8%
Intermediate	16.5%	16.4%	14.4%
Multi-level	75.4%	72.9%	74.8%
Age			
< 65	1.6%	1.4%	1.6%
65 - 74	8.5%	8.3%	7.6%
75 - 84	35.1%	33.3%	33.6%
85 +	54.9%	57.0%	57.1%

Source: Quarter 4 Management Minute Questionnaire data filed by facilities for each year with the Division of Medical Assistance.

Notes: n values represent the number of Medicaid-funded nursing facility residents with reliable data for the period, statewide. % values represent the proportion of the Medicaid-funded residents with a primary diagnosis of Alzheimer's disease, in each category.

Table 3.8 Proportion of Medicaid-Funded Nursing Facility Residents with a Primary Diagnosis of Alzheimer's Disease by Number of ADL Dependencies (1991 - 1993)

Number of ADL Dependencies	1991 (n) = 37,762 (%)	1992 (n) = 37,987 (%)	1993 (n) = 34,912 (%)
0	2.3%	1.9%	1.8%
1	1.9%	1.5%	1.5%
2	6.8%	5.6%	4.9%
3	5.7%	5.7%	5.7%
4	6.3%	5.9%	5.8%
5	9.8%	9.2%	7.6%
6	29.1%	28.6%	28.8%
7	38.1%	41.6%	44.0%

Source: Quarter 4 Management Minute Questionnaire data filed by facilities for each year with the Division of Medical Assistance.

Notes: n values represent the number of Medicaid-funded residents with reliable data for the period, statewide.
% values represent the proportion of the Medicaid-funded nursing facility residents, with a primary diagnosis of Alzheimer's disease, having that number of ADL dependencies.
The following MMQ codes are regarded as "dependent" for each of the ADLs: Bathing (2,3), Dressing (2,3), Mobility (3,4), Eating (2,3,4,5,6,7,8,), Continent (3,4,5,6), Toilet Use (2,3) and Transfer (2,3).

Appendix 1: Definitions of Category Groups

Health Service Area (HSA) Department of Public Health's divisions of the State; see the map in Appendix 2.

Level of Care Department of Public Health's licensing groups by "types of beds."

Acronym	Definition
SNF	Skilled Nursing Facility
ICF	Intermediate Nursing Facility
MULTI	Combination of two or more levels
PEDI	Pediatric Nursing Facility (w/ or w/o geriatric residents)

Management Structure Is the facility owned/operated by a management company as evidenced by the annual filing of an RSC-3 Cost Report with the Massachusetts Rate Setting Commission?

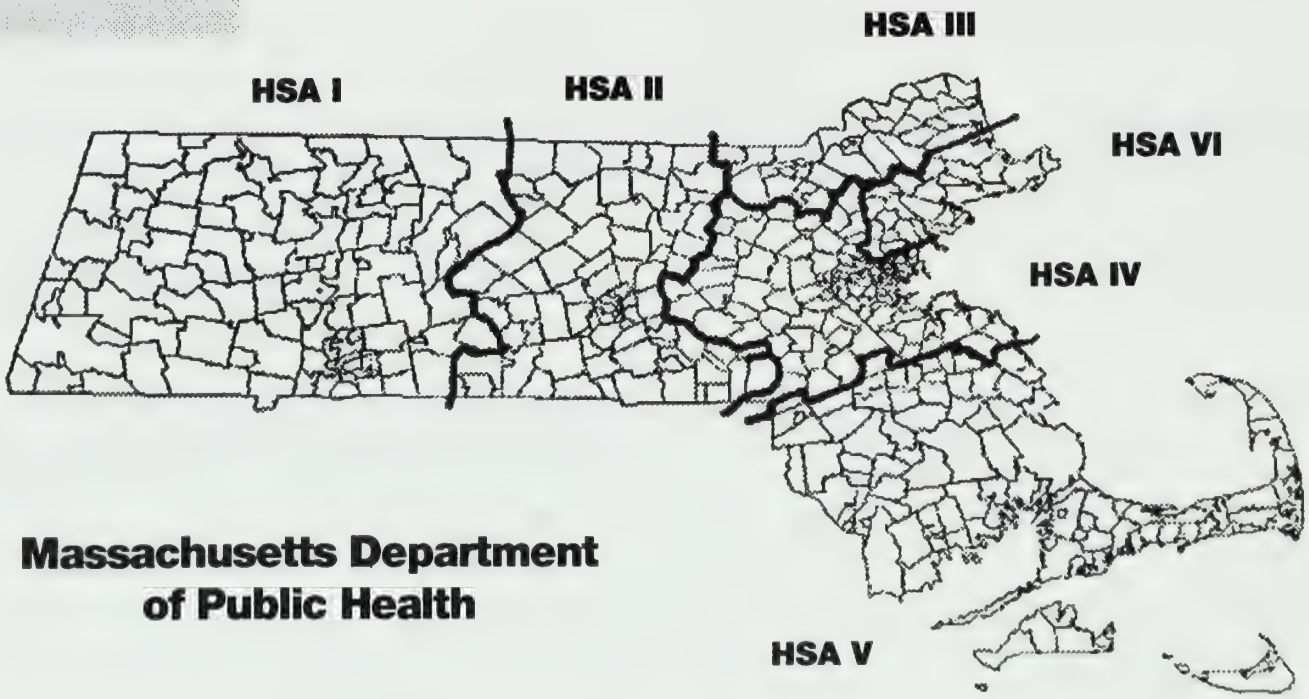
Options: Management Co. versus Independent

Profit Status Has the facility been identified on the annual RSC-1 Cost Report as a for-profit or not-for-profit entity?

Options: For-Profit vs. Non-Profit

Fatir

Appendix 2: Health Service Areas



Massachusetts Department of Public Health

Appendix 3: Statistical Applications Used in this Report

The following is a review of the descriptive statistics used in this report. Definitions for median, mean, and standard deviation are provided in the context of the example below. The 11 facilities in this 'industry' have the following per diem operating expenses:

#1 $ 55.00	#4 $ 96.75	#7 $110.25	#10 $130.90
#2 $ 57.80	#5 $109.50	#8 $126.30	#11 $275.60
#3 $ 76.20	#6 $109.75	#9 $129.25	

The ***median*** is the middle value in a group of ordered observations. In the above example, the median cost is located at observation #6; $109.75. In cases where there are an even number of observations the median is the average of the middle two values.

The ***mean*** is the average of the group. More precisely, it is the sum of all the values divided by the number of observations. The above industry mean is: $1,277.30 / 11 = $116.12. Note that the mean may be much higher or lower than the median when the data contains extreme values. In this example, the mean may not be representative of the group since it is influenced by the noticeably higher costs of facility #11.

The ***standard deviation*** is the square root of the variance. It is also a measure of how scattered the values are in the group (dispersion). The standard deviation is expressed in the same units as the original observations; for this example the units of measure are dollars and cents. The variance is a measure of how scattered the data are. The variance of a group of values is calculated as follows:

- determine the difference between each value in the group and the mean for the group;
- square the difference for each of the observations in the group;
- sum the squared values for the observations in the group; and
- divide the sum by the number of observations in the group.

The calculation of the variance and standard deviation for the example above is:

	Costs	-	Mean	=	Deviation	Deviation Squared
# 1	55.00		116.12		- 61.12	3735.65
# 2	57.80		116.12		- 58.32	3401.22
# 3	76.20		116.12		- 39.92	1593.61
# 4	96.75		116.1		- 19.37	375.20
# 5	109.50		116.12		- 6.62	43.82
# 6	109.75		116.12		- 6.37	40.58
# 7	110.25		116.12		- 5.87	34.46
# 8	126.30		116.12		10.18	103.63
# 9	129.25		116.12		13.13	172.40
#10	130.90		116.12		14.78	218.45
#11	275.60		116.12		159.48	25,433.87

Sum:	35,152.89
Variance:	(Sum/11) = 3,195.72
Standard Deviation:	[square root of 3,195.72] = $ 56.53

The measures of variance and standard deviation are important when comparing data. Two groups of data may have the same mean, but if the standard deviation of one group is much greater than the other, the data in the first group is more scattered (greater dispersion) than the second group. This principle is illustrated below:

	A Costs	B Costs
# 1	$ 55.00	$ 41.60
# 2	$ 57.80	$ 42.65
# 3	$ 76.20	$ 72.60
# 4	$ 96.75	$ 96.75
# 5	$109.50	$100.90
# 6	$109.75	$109.75
# 7	$110.25	$110.25
# 8	$126.30	$126.30
# 9	$129.25	$147.50
#10	$130.90	$153.40
#11	$275.60	$275.60
Median:	$109.75	$109.75
Mean:	$116.12	$116.12
Variance:	3,195.72	3,767.18
Standard Deviation:	$ 56.53	$ 61.38

Although the median and mean values are the same in both groups, it can not be assumed that costs are consistent between the groups. The costs in group B are slightly more variable than those in group A. The higher variance value, and consequently higher standard deviation value for group B, supports the finding. It may be said that the costs in group B are more widely scattered than those in group A. This is supported by the lower costs of facilities #1 and #2 and higher costs of facilities #9 and #10 in group B. Therefore, the dispersion between the two groups can be compared using these simple statistical measures.

Appendix 4: Definitions for the Variables Presented in this Report

I. Facility Demographics, Utilization, and Occupancy

Total Utilization Percentage = [Total Reported Patient Days / (Total Mean Operating Beds per RSC for the year X Days in the year)]

Bed-Day Occupancy Percentage, by Resident-Funding Source:

Mass. Commission of the Blind (COB) = (Total COB-funded days / Total Reported Patient Days)

Mass. Medicaid = (Total Mass. Medicaid-funded days / Total Reported Patient Days)

Medicare = (Total Medicare-funded days / Total Reported Patient Days)

Non-Mass. Medicaid = (Total Non-Mass. Medicaid-funded days / Total Reported Patient Days)

Private = (Total Privately-funded days / Total Reported Patient Days)

Veterans' Administration (VA) = (Total VA-funded days / Total Reported Patient Days)

II. Expenses, Revenues, and Financial Structure

A. Expenses

Administrative Expense Per Diem =

Sum of:

- Administration-Education/Training
- Administration-Group Life/Health Insurance
- Administration-Payroll Taxes
- Administration-Pensions
- Administration-Other Benefits
- Administration-Salaries
- Administration-Worker's Compensation
- Clerical (all costs; including associated taxes and benefits for employees in this category)
- Management Consultants
- Management Fees
- Officers-Group Life/Health Insurance
- Officers-Payroll Taxes
- Officers-Salaries
- Officers-Worker's Compensation
- Profit Sharing & Officers Pensions

Divided by:

Total Reported Patient Days

Director of Nurses Expense Per Diem =

Sum of:

- Director of Nurses-Group Life/Health Insurance
- Director of Nurses-Other Benefits
- Director of Nurses-Payroll Taxes
- Director of Nurses-Pensions
- Director of Nurses-Salary
- Director of Nurses-Worker's Compensation

Divided by:

Total Reported Patient Days

Employer's Health Insurance Expense per $100 of Employee Gross Wages* =

Sum of:

- Administration-Group Life/Health Insurance
- Director of Nurses-Group Life/Health Insurance
- Non-Nursing-Group Life/Health Insurance
- Officers-Group Life/Health Insurance
- Other Nursing-Group Life/Health Insurance

Divided by the Sum of:

- Administration-Salaries
- Clerical-Salaries
- Dietary Staff-Salaries
- Dietician-Salaries
- Director of Nurses-Salaries
- Housekeeping-Salaries
- Laundry-Salaries
- LPN-Salaries
- Management Minutes Questionnaire Nurse-Salaries
- Nurses' Aides-Salaries
- Officers-Salaries
- Plant Operations, Maintenance & Security-Salaries
- Quality Assurance Professional-Salaries
- Recreational Therapy-Salaries
- Restorative Therapy-Direct Salaries
- Restorative Therapy-Indirect Salaries
- RN-Salaries
- Social Service Worker-Salaries
- Ward Clerks & Medical Records Librarian-Salaries

Multiplied by:

100

***Note:** In instances where a value was reported in a Group Life/Health Insurance account for which no salary value was reported, the Salary and Group Life/Health Insurance accounts for that job category were not included in this calculation for that facility.

Employer's Pension Benefit Expense per $100 of Employee Gross Wages* =

Sum of:

- Administration Pensions
- Director of Nurses Pension
- Non-Nursing-Pensions
- Profit Sharing & Officer Pensions
- Other Nursing-Pensions

Divided by the Sum of:

- Administration-Salaries
- Clerical-Salaries
- Dietary Staff-Salaries
- Dietician-Salaries
- Director of Nurses-Salaries
- Housekeeping-Salaries
- Laundry-Salaries
- LPN-Salaries
- Management Minutes Questionnaire Nurse-Salaries
- Nurses' Aides-Salaries
- Officers-Salaries
- Plant Operations, Maintenance & Security-Salaries
- Quality Assurance Professional-Salaries
- Recreational Therapy-Salaries
- Restorative Therapy-Direct Salaries
- Restorative Therapy-Indirect Salaries
- RN-Salaries
- Social Service Worker-Salaries
- Ward Clerks & Medical Records Librarian-Salaries

Multiplied by:

100

***Note:** In instances where a value was reported in a Pension Benefit account for which no salary value was reported, the Salary and Pension Benefit accounts for that job category were not included in this calculation for that facility.

Employer's Worker's Compensation Expense per $100 of Employee Gross Wages* =

Sum of:

- Administration-Worker's Compensation
- Director of Nurses-Worker's Compensation
- Non-Nursing-Worker's Compensation
- Officers-Worker's Compensation
- Other Nursing-Worker's Compensation

Divided by the Sum of:

- Administration-Salaries
- Clerical-Salaries
- Dietary Staff-Salaries
- Dietician-Salaries
- Director of Nurses-Salaries
- Housekeeping-Salaries
- Laundry-Salaries
- LPN-Salaries
- Management Minutes Questionnaire Nurse-Salaries
- Nurses' Aides-Salaries
- Officers-Salaries
- Plant Operations, Maintenance & Security-Salaries
- Quality Assurance Professional-Salaries
- Recreational Therapy-Salaries
- Restorative Therapy-Direct Salaries
- Restorative Therapy-Indirect Salaries
- RN-Salaries
- Social Service Worker-Salaries
- Ward Clerks & Medical Records Librarian-Salaries

Multiplied by:

100

***Note:** In instances where a value was reported in a Worker's Compensation account for which no salary value was reported, the Salary and Worker's Compensation accounts for that job category were not included in this calculation for that facility.

Fixed Expense Per Diem =

[(Total Fixed Costs + Mass. Excise Tax + Insurance - Building, Improvements & Equipment) / Total Reported Patient Days]

Nursing Expense Per Diem =

Sum of:

- LPN-Purchased Service
- LPN-Salaries
- Nurses' Aides-Salaries
- Nurses' Aides-Purchased Service
- Other Nursing-Group Life/Health Insurance
- Other Nursing-Other Benefits
- Other Nursing-Payroll Taxes
- Other Nursing-Pensions
- Other Nursing-Worker's Compensation
- RN-Purchased Service
- RN-Salaries

Divided by:

Total Reported Patient Days

Total Operating Expense Per Diem =

(Total Operating Expenses / Total Reported Patient Days)

Total Other Operating Expense Per Diem =

Sum of:

- Adult Day Care Costs
- Bad Accounts
- Interest on Late Payments, Penalties
- Interest on Working Capital Loans
- Keyman Insurance
- Massachusetts & Federal Income Tax
- Motor Vehicle-Excise Tax
- Motor Vehicle-Expenses
- Motor Vehicle- Insurance
- Motor Vehicle-Interest on Note
- Nurse Aide Training Administration Costs
- Refunds and Allowances

Divided by:

Total Reported Patient Days

Variable Expense Per Diem =

Sum of:

- Administrators-in-Training (all costs; including associated taxes and benefits)
- Conventions and Meetings
- EDP/Payroll/Bookkeeping Service
- Job Related Education
- Malpractice & General Liability Insurance
- Office Supplies
- Other Required Education
- Staff Development Coordinator (all costs; including associated taxes and benefits)
- Total Accounting (including Appeal Service and Other)
- Total Advertising (including Promotional and Help Wanted)
- Total Dietary (all costs; including associated taxes and benefits for staff)
- Total Housekeeping (all costs; including associated taxes and benefits for staff)
- Total Laundry (all costs; including associated taxes and benefits for staff)
- Total Legal (including Appeal Service, DALA Filing Fees, and Other)
- Total Licenses and Dues (including Promotional, Goodwill, and Legislative Activities)
- Total Medical Services (including QA Professional, Ward Clerk & Medical Records Librarian, all Physicians' Services, all Medical Supplies & Drugs, Pharmacy Consultant, and Social Service Worker)
- Total Other Operating Expenses (list is determined by individual facility)
- Total Plant Operations & Maintenance (all costs; including associated taxes and benefits for staff)
- Total Restorative & Recreational Therapy (including Direct and Indirect Salaries and Consultants, Recreational Therapy-Purchased Service, Recreational Therapy-Supplies & Expenses, and Recreational Therapy-Transportation)
- Total Telephone (including Directory Advertising)

Divided by: Total Reported Patient Days

B. Revenues

Total Revenue Per Diem = (Total Gross Income from all sources / Total Reported Patient Days)

Medicaid Revenue Per Diem (Massachusetts) = [(Mass. Medicaid Income + Mass. Medicaid Patient Resource Income + Mass. Commission for the Blind Income) / (Total Mass. Medicaid-funded days + Total COB-funded days)]

Medicare Revenue Per Diem = (Medicare Income / Total Medicare-funded days)

Private Revenue Per Diem = (Private Income / Total Privately-funded days)

C. Financial Structure[1]

Current Ratio = (Current Assets / Current Liabilities)

Long-Term Debt to Asset Ratio = (Total Debt Due After One Year / Total Assets)

Quick Ratio = [(Cash + Accounts Receivable) / Current Liabilities]

Return on Assets Ratio = [(Total Revenue[2] - Total Operating Expenses) / Total Assets]

Total Debt to Asset Ratio = (Total Debt / Total Assets)

III. Resident Demographics and Clinical Characteristics[3]

A. Activities of Daily Living (ADLs)

Bathing = The maintenance of personal cleanliness and good grooming. This includes activities relative to bathing, shaving, and teeth brushing.

Dressing = The putting on of clothing appropriate for the daily activities of the resident. Residents who remain in night clothes are considered "not dressed" and are not included in the data presented in Table 3.3.

Eating = The ingestion of food either by oral, tube feeding procedures, or syringe feeding methods.

Incontinence (bladder or bowel) = The regular (rather than occasional) inability to control misturation or bowels or to notify staff of the need for assistance.

Toilet Use = The resident's ability to access the toilet due to needs other than those related to incontinence of the bladder and/or bowels.

B. ADL-Dependency Levels

Independent = The resident is generally able to attend to his/her ADLs with only occasional staff assistance (e.g. weekly bathing; setting out of clothing; walking with equipment; etc.).

Assist = The staff provide assistance, including verbal instructions, motivational assistance, continual supervision, and physical assistance to assure completion of tasks, while the resident attends to his/her ADLs (e.g. daily washing with staff supervision; staff application of splints, braces, etc.; physical assistance with walking with/without equipment or in propelling a wheelchair; etc.).

Totally Dependent = The staff attend to the resident's ADLs without assistance from the resident (e.g. bed-side bathing by staff; fully dressed by staff; constant assistance by staff for food intake; etc.).

C. Clinical Characteristics

Activity Levels: *Active* = The resident participates in activities at regular intervals.
Occasionally Active = The resident participates in activities occasionally.
Rarely Active = The resident rarely or never participates in activities.

Behavioral Problems = Special attention is required for a resident who displays selected types of behaviors, at least three times per week. Such behaviors are generally considered dependent or disruptive and require staff intervention (e.g. disrobing or exposing oneself; screaming; stealing; getting lost or wandering into inappropriate places; etc.).

Disorientation = The resident exhibits an inability to remember dates or time, identify familiar locations or people, recall important aspects of recent events, or make straightforward judgements to such a degree that he/she is impaired nearly every day in the performance of basic activities of daily living, mobility, and adaptive tasks.

Immobility = Special attention is required for a resident who is so heavy, helpless, or combative that two or more people are needed to change, position, transfer, or ambulate the resident. This includes the use of mechanical lifting devices to execute the movement of the resident.

Isolation = Special attention is required for a resident in that staff are required to wear a gown and gloves when attending the resident.

Restraint Use = Special equipment is used to maintain the resident's position in a chair or bed (e.g. waist belts/shoulder harnesses for residents using a wheelchair).

Spasticity/Rigidity = Special attention is required for a resident who is spastic or rigid to such a degree that the personal care and ambulation of the resident is severely inhibited.

Endnotes for Appendix 4

1. These variables include data from both the RSC-1 and RSC-2 annual Cost Report filings, as appropriate.
2. Total Revenue is net of revenue generated by endowment income.
3. The definitions have been excerpted from the Division of Medical Assistance's, Instructions for Completing Management Minutes Questionnaire (MMQ) and Management Minutes Questionnaire Turnaround Document (MMQTD), Revised 4/90.

Appendix 5: Management Minutes Questionnaire

Reason for Submission Code 1 - 5 ☐ | M M D D Y Y Date of Admission

Commonwealth of Massachusetts — EOHHS
Division of Medical Assistance
Management Minutes Questionnaire

M M D D Y Y Effective Date

Last Name | First | MI | Sex | Race

Recipient Identification Number (RID) | D.O.B. M M D D Y Y Y Y | 0 9 Vendor Payment Number | Facility Name

SERVICE	CODE	SCORE
1. Dispense Meds and Chart + C1 / S30 for all patients	1	30
2. Skilled Observation Daily + C1 / S0 - no observation C2 / S15 - daily observations		
3. Personal Hygiene C1 / S0 - independent/restorative prg. C2 / S18 - assist C3 / S20 - totally dependent Bathing Grooming		
4. Dressing C1 / S0 - independent/restorative prg. C2 / S30 - assist C3 / S30 - totally dependent C4 / S0 - socks and shoes only C5 / S0 - not dressed		
5. Mobility C1 / S0 - independent/restorative prg. C2 / S0 - independent w/wheelchair C3 / S32 - walks with assist C4 / S32 - wheelchair with assist C5 / S0 - nonambulatory		
6. Eating C1 / S0 - independent/restorative prg. C2 / S20 - assist C3 / S45 - totally dependent C4 / S90 - tube fed + C5 / S90 - I.V. + C6 / S110 - tube fed and assist + C7 / S135 - tube fed and totally dependent + C8 / S135 - tube fed and I.V.+		
7. Continence/Catheter C1 / S0 - continent C2 / S0 - incontinent occasionally C3 / S48 - incontinent & toileted C4 / S48 - incontinent C5 / S20 - indwelling catheter *Note:* if bladder is C5 & bowel is C3 or C4 / S38 C6 / S18 - bowel incontinent & bladder training Bladder Bowel		

SERVICE	CODE	SCORE
8. Bladder/Bowel Retraining C1 / SO - no retraining received C2 / S50 - bladder retraining C3 / S18 - bowel retraining C4 / S68 - bladder and bowel retraining		
9. Positioning C1 / S0 - independent C2 / S36 - assist		
10. Decubitus Prevention C1/ S0 - no preventive measures C2 / S10 - preventive measures		
11. Skilled Procedure Daily / Decubitus + C0/S0 if none C daily frequency / S10X frequency Enter # at each stage 1 2 3 4		
12. Skilled Procedure Daily / Other + C0 / S0 if none C daily frequency / S10X frequency Enter up to 3 procedure types PROCEDURES		
SUBTOTAL		
13. Special Attention Code A - immobility Code B - severe spasticity/rigidity Code C - behavorial problems Code D - isolation A B C D If applies, Code 1, 2, 3 otherwise Code 0 Score 10% of Subto		
14. Restorative Nursing Code 0 / S0 if none Code 1-7 / S30 Code 1 - dressing Code 2 - personal hygiene Code 3 - eating Code 4 - ostomy teaching Code 5 - diabetic teaching Code 6 - ambulation Code 7 - range of motion		
GRAND TOTAL		.
CATEGORY		

+ Care provided only by a licensed nurse

15. Toilet Use — CODE
Code 1 - independent
Code 2 - assist
Code 3 - totally dependent
Code 4 - not toileted

16. Transfer
Code 1 - independent
Code 2 - assist
Code 3 - totally dependent
Code 4 - bed bound

17. Mental Status
Code 1 - oriented
Code 2 - disoriented
Code 3 - not yet determined

18. Restraint — CODE
Code 1 - not ordered
Code 2 - ordered not used
Code 3 - ordered and used daily

19. Activities Participation
Code 1 - always active
Code 2 - occasionally active
Code 3 - rarely active or not active
Code 8 - not yet determined

20. Consultations
Code 00 - no consultations
Code 88 - not yet determined
Enter type and frequency
Code 01-12

TYPE	FREQ.

21. Medications
MED - Code 0-8
F - Code 1 - regularly
- Code 2 - PRN
- Code 3 - one time only

MED
F

22. Accidents/Contracture/Weight Change
Code 1 - Yes
Code 2 - No

A	C	WC

23. Primary Diagnosis .

24. Secondary Diagnosis(es)
. . .

The undersigned certifies, under penalty of perjury, that this Management Minutes Questionnaire is a true and correct statement of documented nursing services provided to the above-named patient.

Signature of Evaluator _____ ,R.N. Date _____ Signature of Administrator _____

Affiliation ☐ CD1- Nursing Facility Staff CD 2- DMA Staff CD 3- Other LTC-001 (Rev. 4/94)

Colophon: Production Notes

Nursing Facilities in Massachusetts 1989-1993 was researched and produced by the staff of the Massachusetts Rate Setting Commission. The Commission solely is responsible for its content and distribution.

Publication design, editing, page layout and the originals for this document were produced in-house using cost-effective, electronic desktop publishing software and microcomputer and photocopier equipment.

Nursing Facilities in Massachusetts 1989-1993 was printed and assembled at the Department of Procurement and General Services, Office of Central Reprographics, Ed Goba, Manager. The report was prepared for general distribution at the offices of the Massachusetts Rate Setting Commission.

Massachusetts Rate Setting Commission
Two Boylston Street
Boston, Massachusetts 02116
(617) 451-5330

◆

Copies of this report are available from the
Massachusetts Rate Setting Commission
Office of Communications
Harry O. Lohr, Jr., Director

Publication of this document approved by Philmore Anderson, State Purchasing Agent
Publication Number 17682-93-500-2/95-MRSC
Printed on recycled paper.